

SD Times

SOFTWARE DEVELOPMENT

The Industry Newspaper for Software Development Managers

MARCH 15, 2001

ISSUE NO. 026

Microsoft Serious
About Web Services3

UDDI Works On
Classification,
Taxonomy Issues3

GoXML Native Database
Clusters Data,
Reduces Seek Time5

ebXML Comes Clean
With SOAP5

FioranoMQ 5 Offers Better
Performance, Test Suite5

Starbase Buys,
Builds on Collaboration7

New iPlanet Servers
Extend Into Sun's ONE
Environment8

SD 2001 to Focus
On Web Services10

New York City to Host
XML DevCon Spring 2001 ..12

BSquare Targets Enterprise
With New Flagship17

Tryllian Spies
Agent Market18

Bigger Embedded Systems
Conference Returns
To San Francisco22

SPECIAL REPORT: TESTING



New Tools, Services
Aim to Ease Headache
Of Software Testing25

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IBM RELEASES BLUETOOTH NETWORK SIMULATOR

BY EDWARD J. CORREIA

Once again, IBM Corp. is taking a lead role in open-source development. The company has released BlueHoc, an open-source project that it says gives developers the ability to simulate an ad hoc, multidevice environment for realistically testing Bluetooth wireless applications.

Bluetooth is a specification for short-range, low-power wireless spread-spectrum radio communications to allow portable, handheld devices to interact with each other and with other devices.

IBM furthered the cause of Bluetooth development last July when it released the BlueDrakar protocol stack for Linux and an

open-source UART transport layer driver. Now IBM has again simplified the job by giving developers a simulation environment in which they can reliably test their applications.

According to Apurva Kumar, the developer of BlueHoc, the most probable uses for the simulator will be for feasibility studies and for testing the performance of various TCP/IP libraries and applications over Bluetooth. The environment reportedly also makes possible the testing of performance during device discovery, establishment of connections, and medium access scheduling policies.

Kumar pointed out, however,

► continued on page 8

Iona Ties It All Together

Offers redesigned product suite for total business integration

BY DAVID RUBINSTEIN

Armed with new acquisitions and a retooled product line, Iona Technologies Inc. last month introduced its total business integration strategy that is designed to take advantage of the growth potential of the B-to-B market.

"Six months ago, we decided strategically to pour our energies into strengthening our B-to-B offering. It also leverages where we come from, our heritage," said Patrick O'Brien, vice president of product strategy. "We're not about creating e-commerce sites."

Iona's heritage has been in the middle tier, with CORBA and J2EE technologies. Its J2EE application server and its Orbix CORBA middleware are the bedrock of the

company's integration strategy, which looks at business integration from three directions—inside the enterprise, at the "edge of the net," and outside the enterprise, according to Iona CEO Barry Morris.

Inside the enterprise, Morris explained, businesses must hook their systems and applications into a single, unified business process. The "edge of the net" Morris defined as the interface between cell phones, handheld

computers and other mobile devices and the back-end data. This, Morris said, is where companies get control of their business assets. Outside the enterprise is where corporations must integrate with their customers and partners, Morris elaborated, calling it "a strategic imperative."



J2EE and Orbix are still the bedrock of IONA's strategy, says CEO Morris.

► continued on page 14

New Suite a Model of Integration

Borland's Enterprise Studio Java adds UML, JSP tools

BY DOUGLAS FINLAY

Keen to sustain the momentum it gained with the recent release of its Kylix development environment for Linux, Borland Software Corp. followed up with the announcement of the Enterprise Studio Java Edition, a distributed Java application development environment that comprises its premier JBuilder Java development tools, Rational Software Corp.'s Rose Modeler 2001 visual modeling tool and Macromedia Inc.'s Dreamweaver UltraDev 4 for modifying existing Java Server Pages (JSP) code and adding new code.

"We've seen an evolution in demand over the last year in our developer base toward visual modeling for developing large applications for distributed environments," said Tony De La Lama, Borland's vice president and general manager of the Java Business Unit. He said that the highly complex nature of distributed application development required smarter and better tools, especially visual tools for developers working on several servers around the world and using distributed technologies, EJBs and CORBA. "Our developers needed tools that could tell them how to model to tell what kinds of applications they need to be developing," he said.

Enterprise Studio Java Edition includes the JBuilder 4 Enterprise, which provides licensing for its 4.5 Application Server and its VisiBroker visual

tools, as well as support for BEA Systems Inc.'s Web Logic Application Server.

Also included in Studio is the Rose Modeler 2001 visual modeling tool and the Rational Unified Process, which includes HTML-based coaches and tracking. "We put Rose in there so that teams could work together" in developing components for the distributed application development process, said De La Lama.

"We see the integration of Rational Rose as a way to reach developers not yet using UML or effective architectural practices to build good applications," said Roger Oberg, Rational's vice president and general manager of visual modeling products.

Rounding out the feature list of Studio is the Dreamweaver UltraDev 4 Web scripting tool. "We have JSP creation within JBuilder at present," De La

Lama said, "but it doesn't have the capability to modify or add to the JSP code." Tony Campitelli, Macromedia's vice president of product management, said that with Dreamweaver UltraDev, developers could utilize the visual HTML tools to create JSP presentation layers and also have access to code, bringing application logic to the pages to create applications quickly.

Borland's De La Lama said that integral to Studio is a round-trip link between Rational's Rose and JBuilder. "This link is critical to Studio because it allows the visual model created to be exported directly into Java class files in JBuilder. And once you make a change to one of those Java class files, it will reflect the change in the model as well," he explained.

Enterprise Studio Java Edition is available this month for \$6,499 until March 31, and \$6,999 after March 31. An upgrade for JBuilder 4 Enterprise customers is \$3,499 until March 31, and \$3,999 after March 31. ■



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Microsoft Serious About Web Services

Not quite ready, .NET Framework, Visual Studio.NET moving forward

BY ALAN ZEICHICK

REDMOND, WASH. — Is .NET vaporware, as some companies would claim? That's not what it looked like during a series of exclusive meetings with SD Times, held on Microsoft's Redmond campus in mid-February. In a series of conversations and hands-on product demonstrations, Microsoft showed how much its .NET strategy has evolved, from a vague, confusing morass of buzzwords when initially introduced last year to a number of products, some shipping, others in widespread beta. Though there's no doubt that .NET isn't yet ready for deployment, there's substance and even vision behind Microsoft's breathless rhetoric.

According to Barry Goffe, a product manager for .NET, the technology will finally be able to allow Microsoft to take on Big Iron. "For 10 years, we've been investing in enterprise service and support," he said, "but we're now at a point where we can compete at the high end" with a strategy of using clusters of low-cost off-the-shelf hardware, rather than a few larger

servers. ".NET, at its core, is about application components that can be delivered on the Internet using widely accepted standards, like XML, SOAP, WDM and UDDI."

According to Goffe, one aftermath of the Web revolution is that many companies have experimented with scaling applications over IP-based networks using HTTP as the transport, and have found that it works. "Integration is implicit to the Internet," he said. "The industry has settled on a way of integrating applications—internal or external to the company—over the IP-based networks. And that's what .NET does."

Open standards? Microsoft? Goffe acknowledged that not everyone is convinced that the giant corporation has changed its ways—but insists that it has. "It's a heterogeneous world," he said, "and our position is to compete on the basis of quality of implementation, rather than insist on the ubiquity of Windows."

Goffe was quick to distinguish between .NET and Microsoft's drive toward Web services. ".NET is mostly a

technology strategy, but there's also a brand," he said. ".NET isn't Web services. .NET is Microsoft's strategy for embracing Web services, which include business-to-business, business-to-consumer, EAI and peer-to-peer computing."

John Montgomery, Microsoft's lead product manager for .NET, described .NET as a collection of services that run on top of a standard operating system—such as Windows—but that offer additional services. Currently, the software stack for a Windows-based system consists of the operating system and its Win32 API set. Sitting on top of that, with Windows 2000, is COM+, which includes the Component Object Model, a distributed component model, a transaction monitor and a message queue.

According to Montgomery, most programmers would find the myriad APIs far too complex; a simple "Hello, world" could take hundreds of lines simply to open a window or to talk to the keyboard. While systems-level C++ programmers might need to talk to those APIs

specifically, most application programmers do not—and would want a simpler interface.

That's what the .NET Framework provides, he said: a series of base classes and a common language runtime (CLR) environment that provides applications with access not only to operating-system services, but also to the network, XML, WSDL, SOAP and SOAP Discovery (DISCO). Application programmers, working with languages that ran through the CLR, could take advantage of those features as easily, he said, as Visual Basic programmers include custom controls. And if an application needed to write directly to COM+ or to Win32 for performance reasons, it still has that option, he said.

The beta of the .NET Framework is available at <http://msdn.microsoft.com>.

What does all that mean? For Windows developers, it means that Web sites can contain not only HTML pages, but also software components that can be embedded into applications written using Microsoft's Visual Studio.NET, which also is currently in beta.

Applications written in any of Visual Studio.NET's languages, demonstrated Dave Mandlen, lead product manager for MSDN and Visual Studio.NET, can be turned into a remotely callable Web service by adding only a few extra parameters to the source code. The application is then compiled and published to a Web site—complete with automatically generated XML descriptions of its SOAP-callable methods. Another Win32 or Web-based application that wants to use those services can discover the remote methods using UDDI and then add those methods by techniques comparable to adding any other component. To see it shown, it's pretty easy.

Easy in the Microsoft world, perhaps. Although the company talks about standards, it's clear that its focus will continue to be on Windows; there are no .NET Framework SDKs or runtimes available for other operating systems or for Web servers other than Microsoft's Internet Information Server. Although Microsoft is dribbling pieces of the .NET Framework out to various standards organizations—such as ECMA and W3C—the company does not plan to share everything. When it comes down to it, it's still largely about Windows. ■

UDDI Works on Classification, Taxonomy Issues

Version 2 improves on naming relationships, geographical support

BY DOUGLAS FINLAY

The Universal Description, Discovery and Integration (UDDI) consortium is working diligently on a version 2 specification—slated for a summer release—that promises to include both new naming relationships to better classify business relationships, and classifications that enable users to drill down to more depth and uncover specifics about company services offered. But while it works on those goals, UDDI will also have to deal with the potentially contentious issue of supporting other taxonomies that describe world locations, including one taxonomy from Microsoft Corp.

UDDI is currently using an unnamed taxonomy for discovering North American cities, but a taxonomy for world geographical information, explaining what cities are in what states and in what countries, will be equally important, said

Bob Sutor, IBM Corp.'s program director of e-business standards and strategies. The Alexandria taxonomy, now under study at the University of California at Santa Barbara for its ability to classify world countries, states and cities, has potential for gaining support from the UDDI committee.

"We won't build any more taxonomies into UDDI because we want to keep it light," Sutor continued, explaining that any further taxonomies considered would be supported by UDDI, but not built into the specification. He said version 2 of UDDI would simply provide support for the taxonomy to be used externally. But Sutor said Microsoft's offer to provide the world geographical taxonomy it uses in some of its products, such as its Encarta encyclopedia, could create a contentious issue because "in an open environment, who would own the

taxonomy?" He said there appears to be a lingering feeling that taxonomies should be done in an open environment.

But Chris Kurt, Microsoft's group program manager for UDDI and Web services, played down the implications of contributing its GeoWeb taxonomy to the UDDI consortium (www.uddi.org) as being contentious, saying instead it would be helpful to those organizations that simply wanted further classification of their businesses and services on a global scale. "ISO 3166-1 [country codes] and 3166-2 [country subdivision codes] include only the largest geographical units, countries and states, and other taxonomies [such as GeoWeb or those from other vendors] will provide the ability to classify businesses and services at greater levels of detail," he said.

Sutor disagreed, saying that

because world geography is constantly changing, there has to be a way to update it and improve it. Sutor posed the question of whether Microsoft's business plans would take these changes into consideration if it owned the taxonomy. "There is no understanding at this time of Microsoft's future plans with its [GeoWeb] taxonomy," he continued.

Sutor said UDDI version 2 would also feature a much improved way to discover and classify business products and offerings of those international companies. He cited, for example, the current difficulty of a company situated in one country with offices in another being unable to describe in any way over the Web the relationship the two have. UDDI version 2, he said, will enable those companies to link to and provide a better classification of their

relationship to each other.

Sutor said improved technologies would provide for named relationships to link businesses to better define their relationships. "A large company such as A may not want infinite small company B's linking to it, for business reasons," he said. Version 2, he maintained, would allow for B to link to A only under a defined relationship basis. "Lotus is both a subsidiary and a partner of IBM," he offered as an example. While there are few IBM subsidiaries, there are many partners. Such relationships will be better defined in version 2 to allow for linkage.

Sutor also said version 2 would provide for better identification of classifications to drill to the appropriate depth of a company to discover the services it offers. When one finds a component company, for example, he or she will next want to find out the classes of components available. After discovery of the classes, businesses using UDDI will want to know the products available under those classes. ■

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GoXML Native Database Clusters Data, Reduces Seek Time

BY DOUGLAS FINLAY

XML Global Technologies Inc. is preparing to release its GoXML database, which the company claims works faster than relational database servers because it eliminates the mapping from the row-and-table structure of a relational database with the hierarchical model that fits the structure of XML documents.

"GoXML DB is an XML database that is deployed across a trading community on a variety of servers used by each of the partners," said Jim Tivy, director of development for XML databases at XML Global (www.xmlglobal.com).

Tivy argued that a native XML database offers significant value over a traditional relational database. For example, he stated that in a relational database environment, individual data elements in columns and tables cannot store multiple values; but XML databases, because they are based on a hierarchical structure, can have multiple values for each element.

Consequently, when storing XML documents into a relational database, Tivy said, "generally,

new schemas have to be developed to support the decomposition." But if the schema changes for any reason, both the relational schema and the XML schema have to be changed, he said, creating more work. He also said that in decomposing, developers are presented with artifacts, or leftover data, from the conversions that they are often tempted to discard.

Tivy said that mapping also has to be developed for queries simply to get the data in and out of the database. "Developers have to construct queries in SQL, essentially mapping a SQL model to an XML model, and that can be difficult." He claims that utilizing a native XML database such as GoXML DB would eliminate the mapping and schemas now

required to map from relational to XML—and vice versa.

Tivy said the largest bottleneck in retrieving data from databases is the seek time, pointing out that GoXML clusters XML data into one sector on a disk drive to greatly reduce the seek time when looking for individual data elements, thus speeding performance time. "In a relational

database, each of the data elements will be in different sectors of the disk, and it will take a certain period of time to access each element of the disk," he said, increasing time spent seeking data.

The Java-based GoXML DB will be available starting in April priced at \$20,000 per server, with discounts available based on volume. ■

EBXML COMES CLEAN WITH SOAP

BY DOUGLAS FINLAY

Buoyed by continual improvements to the XML-based Simple Object Access Protocol, particularly the packaging design in the 1.1 specification, the ebXML consortium reversed its long-held stance against the protocol's efficacy by endorsing it late last month.

"There are three distinct parts or protocols to SOAP that stand separate on their own, and we endorsed the packaging or envelope design in SOAP," said Rik Drummond, ebXML's team leader of the Transport, Routing and Protocol group and president of the Drummond Group

consulting company. The other two protocols within SOAP are the remote procedure call (RPC) and encoding. Drummond also said resolution of intellectual property matters among IBM Corp., Microsoft Corp., Sun Microsystems Inc. and the United Nations/CEFACT group over who owned the protocol and who paid for it also helped in the decision.

According to Drummond, the new attachment methods available to SOAP 1.1 are fundamentally the same Multipurpose Internet Message Extension (MIME) attachments that make up its own MIME/XML

transport protocol package developed last year, a design that enabled unstructured, non-XML data to be included in messages, allowing corporations that had previously invested heavily in EDI to maintain that investment.

Will ebXML's endorsement of SOAP now make it a shoe-in as the W3C's preferred transport protocol? "I don't think it will hurt," Drummond continued. But he said SOAP might not look the same as it does now when final recommendations are made. "Our ebXML protocol set right now has more functionality and is richer with its

reliable messaging than SOAP, for example." He also called the endorsement as much a marketing decision as a technical one, saying it was imperative to eliminate all the varied standards now emerging. "Long range, the transport protocol from W3C, to be called XP, could be a combination of SOAP packaging and ebXML functionality."

Tyler McDaniel, senior analyst at the Hurwitz Group, said, "This convergence strikes a chord to set the politics aside and focus on solutions to meet the needs of Internet commerce."

ebXML (www.ebxml.org) members will formally approve the SOAP envelope design when they meet in Vienna, Austria, on May 6. ■

FioranoMQ 5 Offers Better Performance, Test Suite

New version of JMS server boasts native thread accelerator for Solaris, Windows NT

BY ALAN ZEICHICK

Yes, there is a market for a stand-alone Java Messaging Service server. Even though Sun Microsystems Inc. and the Java Community Process have made JMS a mandatory part of the Java 2 Enterprise Edition specification, and all J2EE-compliant application servers must include a JMS server, many customers will still demand one with more features and higher performance, according to Atul Saini, founder and CEO of Fiorano Software Inc.

Performance is the name of the game to Saini, who counts banks and other large organizations among Fiorano's customer base. He claims that his company's newest release, FioranoMQ 5, scheduled to ship at the end of February, is the fastest and most scalable JMS server on the market.

Saini said that FioranoMQ 5 solves a problem common to all JMS servers: excessive threads.

"All the messaging servers, including FioranoMQ, are written in pure Java," he said. "But for each client connection, the JMS server must spawn a new thread. After about 500 connections, the server slows down. All the JMS servers have this problem."

The solution, he said, is to look outside of Java for a portion of the JMS server. "We created a fixed spool of threads, and multiplex all client connections [onto those threads]. We can handle 7,000 connections on a Windows NT server with only 200 threads. But we can't do that in pure Java. That has to be native code, which we've created for NT and Solaris." According to Saini, developers and systems managers can choose to use FioranoMQ 5 with either a pure Java-based thread manager, or the new native Scalable Connection Manager, which is a module included with the new JMS 1.0.2-compliant server.

Another new performance feature is an improvement to the file system used to store JMS messages, which Saini claims presents about a 20 percent boost in throughput.

But, said Saini, performance isn't the only new feature of FioranoMQ 5. Security of the Java messages is another key area. "We now support Java Realms, which is a set of APIs that pulls security information directly from NT or Solaris," he said. The upgrade also includes a new element, called the FioranoMQ Repeater, which allows multiple servers to be connected together, locally or across geographic regions, using a XML configuration file to filter messages based on content.

Looking forward, Saini said that the company is looking for ways to improve the failover reliability of a JMS server. The problem, he said, is that the database used to store JMS messages can be a weak link. If the database

crashes, messages could be lost. The solution, according to Saini, is to have two redundant databases, dynamically synchronized, with automatic failover implemented in the JMS server. He said that although Fiorano (www.fiorano.com) has not officially announced such a product, the company is looking at the July-to-August time frame to present such an offering. It's unclear if it will be a separate product or an optional feature for FioranoMQ 5.

PERFORMANCE TESTING

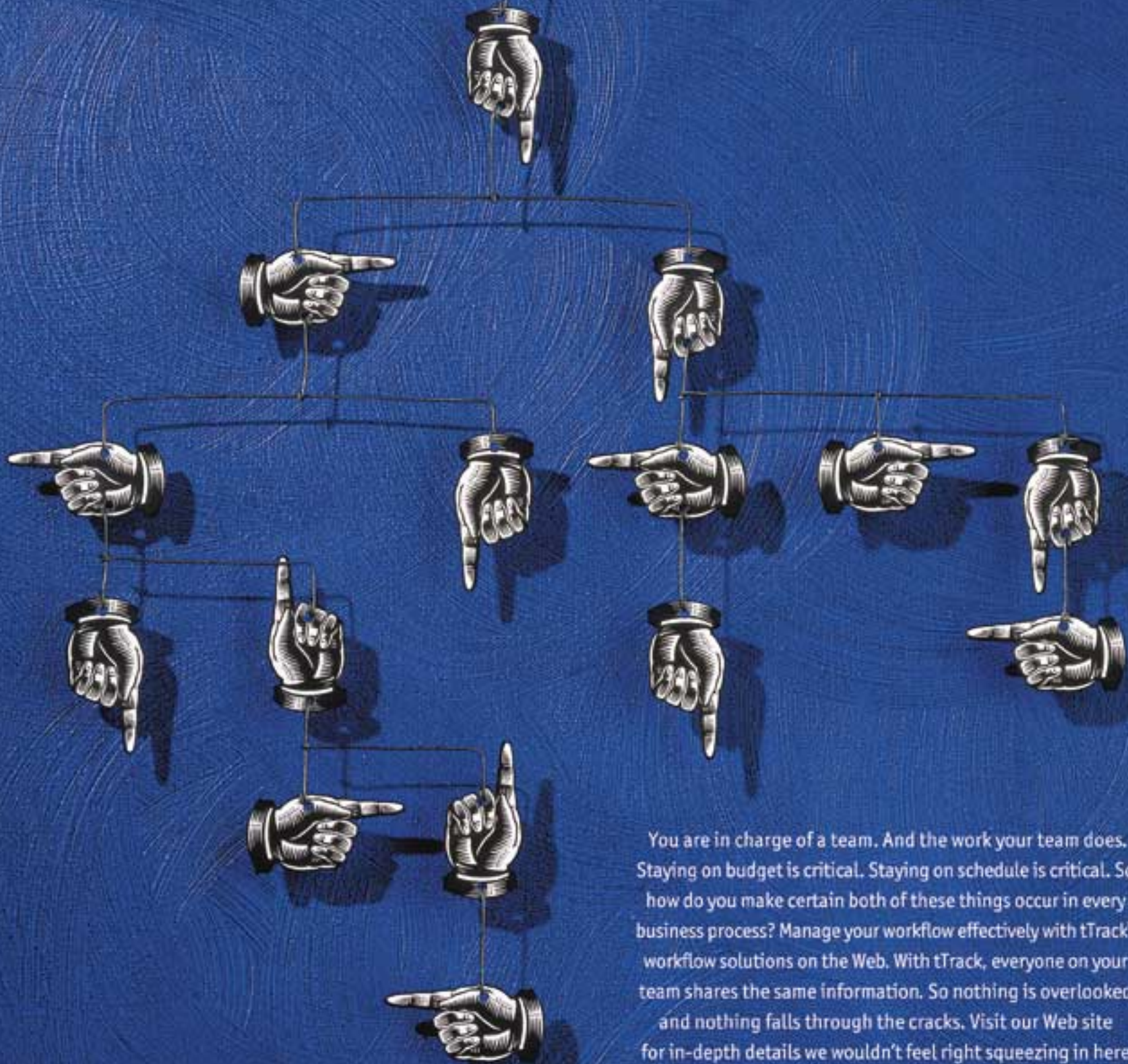
Decrying the lack of affordable and accessible tools for testing the compliance of JMS servers to the official specification, and for measuring the performance of various servers and platforms, Fiorano has released its own. The Fiorano Test Suite, according to Saini, is able to test the performance of any JMS implementation, and is currently being used by BEA Systems Inc., Oracle Corp., Progress Software

Corp. and Sun, to test JMS conformance of their products.

Further, Saini claims that the test suite is the only generally available test suite on the market. "Sun claims to have one," he said, "but it's not available to anyone who won't pay \$200,000." The Fiorano Test Suite is currently available for free for customers who download a trial version of the FioranoMQ server. Saini said that beginning in May, there will be a fee for the use of the test suite.

When asked if Fiorano would submit the test suite to the Java Community Process for official approval, Saini emphatically indicated that he's proud of the suite's independence from Sun and from the JCP. "We haven't submitted [the suite] to the JMS. We don't want to sign a license with Sun that will limit how we can use Java. Look at the customers we have [for the test suite]. One can presume that the tests are okay." ■

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Starbase Buys, Builds on Collaboration

Company purchases requirements tool, kills own peer-to-peer solution

BY ALAN ZEICHICK

The name of the game, according to Starbase Corp., is collaboration. Software developers have been collaborating for years; so have content developers and publishers. Starbase, through its StarTeam source-code management platform, has been serving part of that market for quite a while. Now, with recent acquisitions, most



Now the challenge is integration, which is under way, says Starbase's Smith.

recently of Technology Builders Inc. (TBI), the company has been demonstrating its vision that an entire enterprise development team needs to work together, from requirements to code to content. And with the forthcoming launch of a home-grown peer-to-peer collaboration package, Galaxy, it's adding that functionality to its StarTeam product family as well.

It all started in 1998, according to Jim Smith, executive vice president of Starbase's customer group, when the company was still focused on source-code configuration management. "We saw that SCM is not going to be a separate market from content management," he said. "When building Web sites, programmers and content developers need to collaborate with each other." Since that point, the company extended its reach, acquiring Premia Corp., whose CodeWright software stored information about source code and the development process, and then in early February buying WorldWeb.net Inc., whose Expressroom I/O is an XML-based content management solution, for \$26 million in cash and stock.

The final step in rounding out its collaborative family, according to Smith, was the realization that in order to fully enable collaboration between content and code developers, the process had to start even earlier—in the requirements phase. This resulted in its acquisition, announced less than a week after the WorldWeb.net deal, of TBI, known for its Caliber-RM requirements management software, for \$36.9 million in Starbase stock.

All those acquisitions were strategic in building a suite that can compete against the likes of Merant and Rational, said Smith. "This is not a roll-

up strategy," he said. "We created a map of what we wanted to be, and then we decided, 'Do we want to buy or do we want to build?'"

The challenge now, according to Smith, is integration. "We've identified five or six areas of integration between WorldWeb's Expressroom and

StarTeam," he said. "Both have Java APIs," which makes the products able to be linked. "The integration points will be in use cases," set up in such a way as to make the work flow easy between content developers and programmers, he added. The integration work is

► continued on page 12

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New iPlanet Servers Extend Into Sun's ONE Environment

BY DOUGLAS FINLAY

Not surprisingly, iPlanet E-Commerce Solutions, a joint venture between Sun Microsystems Inc. and Netscape Communications Corp., wasted no time jumping onto Sun's just-announced Open

Network Environment (ONE) bandwagon with the release of two updates to its line of Web and application server software, as well as the introduction of two new servers.

Stuart Wells, iPlanet's senior

vice president of products, said new Web and application servers would be critical to the realization of Sun's Open Network Environment for creating, assembling and deploying Sun's smart Web services, and the

new additions and upgrades to the iPlanet (www.iplanet.com) line of Web servers would help facilitate these actions.

Enhanced features in iPlanet's Web Server 6.0 include support for virtual domains and

improved security. Application Server, Enterprise Edition 6.0 provides enhanced load balancing, clustering and distributed transactions while offering full support of Enterprise JavaBeans.

Application Server, Standard Edition 6.0 is an all-new edition to the application server family that includes support for Java servlets and Java Server Pages, while providing additional session management and monitoring capabilities for deployment. Application Server, Enterprise Pro Edition 6.0 is also a new server that adds business workflow management tools and application integration capabilities. It includes a Universal Integration Framework for projects that require tight integration into existing applications.

Web Server 6.0 will be available in May for \$1,495 per CPU; Application Server, Standard Edition 6.0 will be available in June for \$2,995 per CPU; Application Server, Enterprise Edition 6.0 will be available immediately for \$19,995 per CPU; and Application Server, Enterprise Pro Edition 6.0 will be available this month for \$39,995 per CPU. ■



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IBM

◀ continued from page 1

er, that there are limitations to what a simulator can do. "At a later stage, it may be possible to convert the simulation into an emulation and interface it with a live Bluetooth stack. This would allow developers to run real applications on a simulated Bluetooth wireless link and predict their performance under various ad hoc networking scenarios."

According to the company, BlueHoc presents a software environment consisting of one master Bluetooth device and as many as seven hub-connected devices. The simulator features inquiry and paging procedures, which are used for device discovery and the establishment of connections. Also provided are link-level quality-of-service negotiation, the physical transport layer and an indoor wireless channel.

BlueHoc, which is written in C++, uses an OTcl interface for configuration and a Tk-based graphical user interface. BlueHoc can be downloaded at <http://oss.software.ibm.com/developerworks/projects/bluehoc>. ■

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PERFORCE
SOFTWARE

SD 2001 to Focus on Web Services

BY DOUGLAS FINLAY

One of the software development industry's most important events, CMP Media Inc.'s Software Development Conference & Expo 2001, will take place April 8 to April 12 at the San

Jose Convention Center, San Jose, Calif.

The main event of SD 2001 will be its 150-odd classes and tutorials, three days of exhibitions, and educational tracks in C++, component devel-

opment, Java, Microsoft's .NET strategy, projects and process management, software design, Web development and XML. This year, the conference also introduces Web Services

World, a conference track and separate exhibition area focused on strategies and technologies such as RDF, SOAP, XML, UDDI and WSDL.

"We expect a big show this year, as we are trending well

ahead of last year's registration," said Mike Gottlieb, SD 2001's show director. Last year's show drew 1,200 paid attendees and roughly 5,000 free attendees to the exhibit hall. He believed the reason for the increase was the theme of this year's show—serious content for serious developers—which focuses on quality session content and expert faculty delivering the content.

A panel at the Web Services World—"Power Panel: Collaborating on Standards, Competing on Implementations"—will consist of representatives from Web-service companies sharing their views about how the Internet has changed the way businesses go about competing and computing.

In an information-gathering session at SD 2001 called "Birds-of-Feather: Language of Litigation?" Stanley Lippman, IT program chair of you-niversity.com, will lead a discussion about whether Microsoft's C# is a legitimate language, a feeble Java killer or simply another proprietary language.

Keynote speakers include Grady Booch, Larry Constantine, Jon "maddog" Hall, Lawrence Lessig, Simon Phipps, Andy Roberts, Rod Smith and Bjarne Stroustrup. ■

SOFTWARE DEVELOPMENT CONFERENCE & EXPO

www.sdexpo.com

CONFERENCE: April 8-12, San Jose Convention Center, CA

TUTORIALS:
Sunday, 8:30 a.m.-4:30 p.m.
Monday, 8:30 a.m.-4:30 p.m.

EXHIBIT HOURS:
Tuesday, Noon-6:30 p.m.
Wednesday, 11 a.m.-5 p.m.
Thursday, 11 a.m.-2 p.m.

KEYNOTES:
Sunday, Noon-12:50 p.m., Keynote I:
 "Linux: An Operating System for All Seasons," Jon "maddog" Hall
Monday, Noon-12:50 p.m., Keynote II:
 "The Light-Heavyweight Championship: Toward Usable Processes for Usable Software," Larry Constantine
Tuesday, 8:30 a.m.-9:15 a.m., Keynote III:
 "At Your Service: Leading the E-Business Evolution," Rod Smith
Tuesday, 9:15 a.m.-10 a.m., Keynote IV:
 "Standards, Swarms and Synergy: Developing in the Dot-Com Present, and Ready for the Future of Intelligent Services," Simon Phipps
Tuesday, Noon-1 p.m., Keynote V:
 "Software Development of the Web, for the Web and by the Web," Grady Booch
Tuesday, 4 p.m.-5 p.m., Keynote VI:
 "Generic Programming in C++," Bjarne Stroustrup
Wednesday, 12:30 p.m.-1:15 p.m., Keynote VII:
 "Microsoft .NET," Dan'l Lewin
Wednesday, 1:30 pm-2:15 p.m., Keynote VIII:
 "The XML Web Services Revolution," Andy Roberts
Thursday, 10 a.m.-11 a.m., Keynote IX:
 "Architecting Innovation," Lawrence Lessig



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See us at XML DevCon 2001, April 9-10 in New York, Booth #309

Play It Again, XML

New York City to host second conference on markup language

BY DAVID RUBINSTEIN

XML. SOAP. UDDI. ebXML. SVG. VoiceXML. These messaging and interoperability specifications will come together in "the melting pot of America," New York City, at XML DevCon Spring 2001, to be held April 8 to April 11 at the New York Marriott Marquis. The conference's organizers expect 5,000 people to attend the four-day event.

This spring's conference will feature sessions on e-business, portals and exchanges

and global e-business initiatives, according to Camelot Communications Corp., which owns and produces XML DevCon. In addition, classes will be offered on XML schemas and such technologies and specifications as XPath, RDF and XLink.

Featured speakers include Tim Bray, who is co-editor of the XML specification; Mark Colan, IBM's XML evangelist; Dave Reed of Microsoft; Peter Chen, an IEEE Fellow; Paul

Cotton, chairman of the World Wide Web Consortium's XML Query Working Group; and Jim Melton, editor of the SQL-92 and SQL-99 standards. More than 160 hours of instruction will be offered in daily tracks, including a 20-session night school. There will be six concurrent tracks of instruction: servers and middleware; Java and scripting; wireless and messaging; developer techniques; query/schema/database; and applied XML/enterprise application integration/e-business.

Event organizers are planning two special days during the conference: ebXML Day on April 9, and UDDI Day on April 10. ebXML Day will bring attendees up to speed on three new specifications being brought out: an ebXML Registry specification for defining the interface and behavior of ebXML-compliant registries; a Collaboration Protocol Agreement that describes the IT specifications within an electronic Trading Partner Agreement; and an ebXML Message Service specification. A UDDI tutorial will be offered from 2 p.m. to 5 p.m. on April 10, designed to give an overview of UDDI, provide utilities and sample code to ease development of UDDI solutions, and offer a look at tools from IBM and Microsoft for integration. ■

XML DEVCON SPRING 2001

www.xmldevcon2001.com/NY

CONFERENCE:

April 8-11
New York Marriott Marquis, NY

EXHIBIT HOURS:

Monday, 12:40 p.m.-6:45 p.m.
Tuesday, Noon-5 p.m.

KEYNOTES:

Monday, 8:30 a.m. -9:15 a.m.
"XML: Where We're Coming From, Where We're Going," Mark Colan, IBM Corp.

Monday, 11:55 a.m.-12:40 p.m.
"Web Services Interoperability," Dave Reed, Microsoft Corp.

Wednesday, 8:20 a.m.-9:05 a.m.
"XML in the Large: The Big Picture," Norbert Mikula

Wednesday, 1 p.m.-1:45 p.m.
"XML's Greatest Hits (And Misses)," Tim Bray

SPECIAL EVENTS:

April 9: ebXML Day
April 10: UDDI Day

STARBASE

← continued from page 7

æwell under way. Smith said that to help motivate StarTeam customers to purchase Expressroom, new pricing and promotions will appear in April.

The process of integrating TBI's Caliber should be even easier, according to Smith, as the products were already interoperable. In fact, he said about 30 customers already use StarTeam and Caliber in conjunction with Mercury Interactive Corp.'s TestDirector and a UML tool from Embarcadero, Rational or TogetherSoft.

Does Starbase (www.starbase.com) plan to make additional acquisitions to round out its collaboration suite? Don't rule them out, said Smith, but expect them to be smaller companies and tools that complement the company's new product line, not major new pieces. Along with acquisitions, the company is focused on a drive toward profitability; Smith said that the company



Galaxy, now in beta, features peer-to-peer file sharing and chat.

should have positive cash flow before the end of this year.

PEER TO PEER

Starbase's growth plans don't revolve solely around acquisitions; on March 21, the company is expected to begin beta testing Galaxy, a home-grown collaborative tool for peer-to-peer development, said Smith. "It's based on StarTeam's server architecture," he said, "but incorporates technology from Talarian, using their Smart-

Sockets to do publishing-and-subscribe and multicast." Starbase has added features for chat and peer-to-peer file transfers.

Pricing of Galaxy has not yet been fixed, but "we want it to be like a low-cost addictive drug," laughed Lydia Patterson, vice president of Starbase's products group. The company is still determining whether it will be offered for free, or for a low price. A date for general availability has not yet been set. ■

News Briefs

COMPANIES

Following in the footsteps of IBM Corp.'s developerWorks Web site, **Sun Microsystems Inc.** is partnering with **Flashline.com Inc.** to allow it to create a virtual marketplace within the Forte for Java portal. Flashline will build a virtual community for Java developers who can then easily access, evaluate and purchase models and add-ons to extend the Forte for Java development environment, as well as extend commercial Java technology-based components that can be plugged into applications to accelerate development. The marketplace is available at www.sun.com/forte/ffj/resources/marketplace . . . **ANT Ltd.**'s Fresco browser has been ported to **STMicroelectronics** OMEGA Sti551x family reference design hardware and application programming interface software for set-top boxes. In addition, **Enea OSE Systems** has chosen ANT's Fresco browser and its e-mail client to integrate both into the OSE real-time operating system for wireless terminals . . . A recent survey of 500 CIOs and senior-level IT professionals by the **IDG Research Services Group** and sponsored by **XMLSolutions Corp.** reports that XML technology budgets will have an 86 percent increase over last year's XML budgets, while a separate report from **Morgan Stanley Dean Witter & Co.** contrasts that increase with a modest 8 percent growth for corporate IT budgets within the same year. The IDG report, due in a future issue of CIO Magazine, concludes that companies are rapidly embracing XML.

PRODUCTS

IBM Corp.'s **VisualAge Micro Edition Version 1.3** Just-In-Time compiler has added new features, including an IBM preview beta implementation of the Real-Time Extensions for Java specifications; library executables repackaged as shared objects to permit further reduction of the size of runtime Java application support; IBM beta implementation of Connected Limited Device Configurations based on Sun's J2ME Java Community Process specification; IBM's new gateway library configuration; preview beta implementation of the J9 virtual machine for QNX Software Systems Ltd.'s QNX6 real-time operating system; and revision of IBM's Component Distribution System components . . . Dundas Software Inc. has released its Internet development tools for Visual C++ called **Dundas TCP/IP 4.0**, which now includes SSL/TLS secure protocols—both in binary and source code format—to provide for digital certificate capabilities. Prices range from \$699 to \$1,299 for the Client edition, which includes complete client protocol source code with SSL/TLS binary add-on; and \$2,999 to \$4,999 for the Enterprise edition, which includes all client protocols, control and source code, as well as server-side frameworks and the SSL/TLS binary add-on . . . Microsoft Corp.'s **Service Pack 5 for Visual Studio 6.0** features fixes for Visual Studio 6.0, Visual C++ 6.0, Visual FoxPro 6.0, Visual J++ 6.0 and Visual SourceSafe 6.0. It also addresses known binary-compatibility bugs with certain runtime redistributable files in Visual Studio 6.0 to enable SQL Server 2000 compatibility. Visit <http://msdn.microsoft.com/vstudio/sp/vs6sp5/default.asp>.

PEOPLE

InstallShield Software Corp. has promoted **James Lureau** to vice president of product development, from director of product development. He assumes responsibility for the company's worldwide product development . . . **Muyiwa Idowu** has been named Application Technologies Inc.'s new COO to direct the company's global expansion. Application Technologies provides one-stop-shop e-business programs to multinational corporations



. . . The HR-XML Consortium, a nonprofit group focusing on human resources data exchange, has added six members to its board, including **William Kerr**, principal software engineer, Oracle HRMS development; **Terrance Baker**, vice president, talent resourcing, Hire.com; **Linda le Grand**, senior manager, Randstad corporate ICT office; **Timothy Farlow**, director of technology, Authoria; and **Bruce Kile**, vice president, implementation services, Peopleclick . . . RosettaNet has appointed **Derek Coleman** and **Pete Wenzel** as chief technologists for the year 2001. Their focus will be to build a technical architecture office to lead RosettaNet development standards. Coleman is from Hewlett-Packard Co., and Wenzel is from SeeBeyond Technology Corp. ■

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IONA

◀ continued from page 1

The key differentiator between Iona's platform offering and those from competitors BEA, Cisco, IBM, Microsoft, Oracle and Sun, according to Morris, is that Iona's suite is based on what he called adap-

tive runtime technology. As described by O'Brien, this technology abstracts such functionality as communication among objects, transactions, security and naming services, and reduces them to a "kernel with plug-in capabilities for different personalities, such as J2EE or CORBA—the core

messaging infrastructure," he said. "If you had to build separately for each of these, you'd have a lot of redundancy."

Iona's strategy incorporates many of its products and introduces two new ones: iPortal XMLBus and SureTrack. The XMLBus is a toolkit for the creation of applications to be

exposed as services over the Web. XMLBus uses the Web Services Description Language (WSDL) to describe the services and Universal Description, Discovery and Integration (UDDI) to register them and look them up, as well as employing SOAP to invoke the services.

SureTrack, picked up in Iona's acquisition of Genesis Development Corp. last June, is a set of best practices that extends the application development unified process by specializing it for large architecture projects, said Don Roeder, Iona's director of marketing. "We've taken a methodology and packaged it up so it's repeatable and documentable," he said. "It's a road map for making [total business integration] happen."

But perhaps the key new addition to the suite is XDI, which was acquired last month when Iona announced its intention to buy Netfish Technologies Inc. for \$270 million. XDI, Morris said, "is the piece that completes the integration strategy" by allowing for business process automation in a collaborative fashion over the Internet, as well as integration to legacy applications, Morris said.

The remainder of the suite is made up of the iPortal Integrator, based on EAI technology acquired from Software AG; the iPortal OS/390 Server, which aids in exposing business processes and logic residing on mainframes; the iPortal Application Server, which provides the J2EE underpinnings for developing and deploying EJB-based applications; and Orbix, Iona's CORBA-based middleware platform.

To help construct the suite, Iona also recently purchased Object Oriented Concepts Inc., which brought embedded ORB technology to Iona; and Suplicity, a division of NEC Corp., whose technology contributed to the creation of a graphical business process automation environment within the suite.

Iona (www.iona.com) is the latest application server vendor to expand its product offering, following the lead of such companies as SilverStream and Sybase. "Application servers sit behind Web services," O'Brien said. "We're more integration brokers, with a platform based on more messaging and services that have a process flow associated with them." ■



Iona's technology abstracts much of the true redundancy between systems, says O'Brien.

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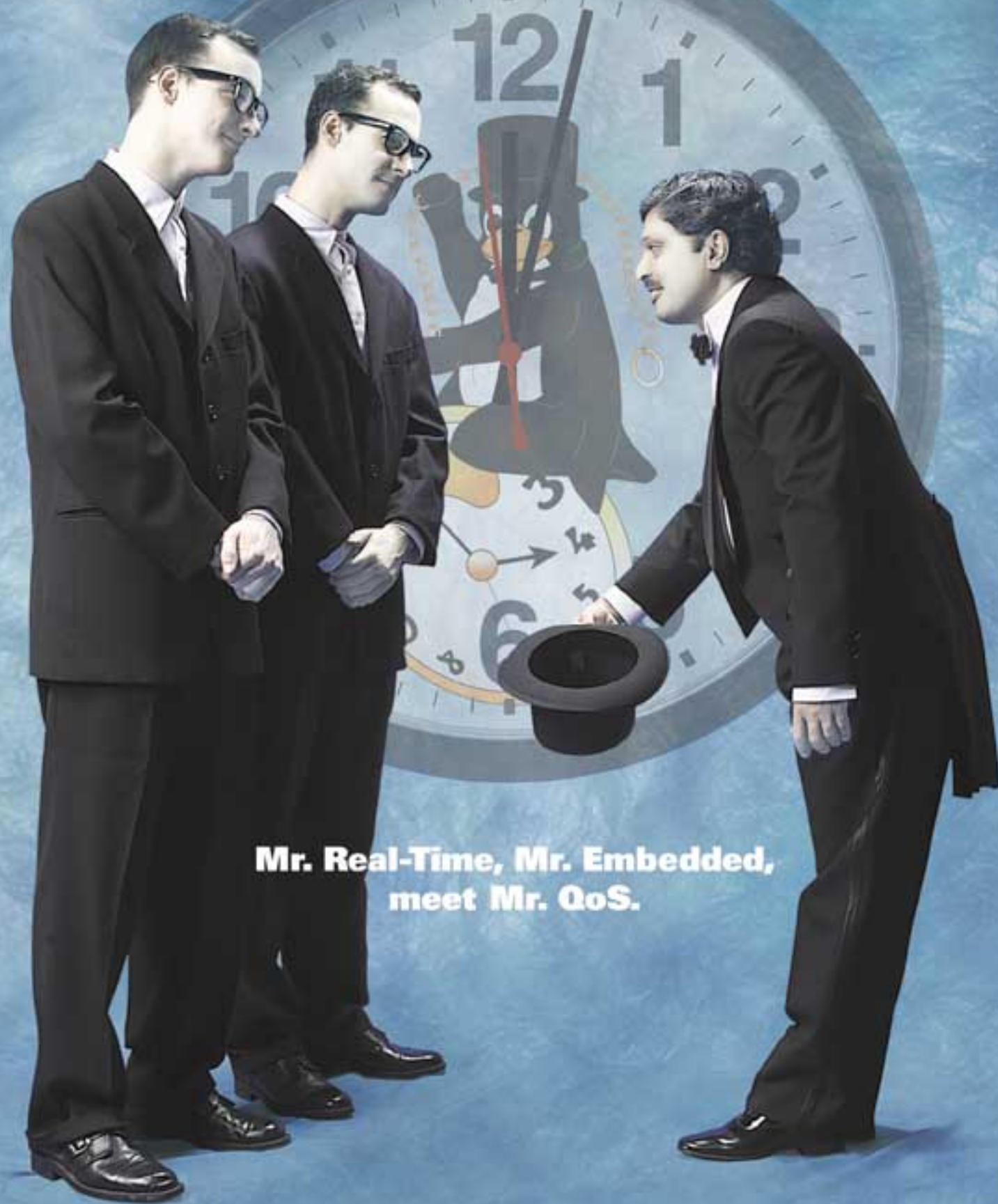
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BSquare Targets Enterprise With New Flagship

BY EDWARD J. CORREIA

With a nip here, a tuck there and a few new components thrown in, embedded tool maker BSquare Corp. has created a new flagship. The company has released the iWin Information Appliance Design Kit, a collection of tools that reportedly provides a complete solution for the creation, deployment and management of Internet-based appliances.

According to Macgill Lynde, BSquare's senior product manager for thin clients and Internet appliances, iWin is part revolutionary and part evolutionary, as several existing products have been "improved and adapted for use in information appliances."

The revolutionary part, he said, is iWin's Metabrowser, a framework enabling developers to create user interfaces using a combination of HTML and JavaScript. And while the idea may seem familiar to users of BSquare's Interface Composer (IFC), Lynde described the Metabrowser as a similar tool with an "entirely new approach and architecture." Unlike IFC, the Metabrowser is specifically designed for information appliances and is more closely integrated with browser technology, Lynde said. The module also leverages existing Web authoring tools for creating user interfaces and scripting application interaction, he added. The kit was announced at the Windows Embedded Developers Conference in Las Vegas in February.

In addition to the interface builder, the iWin tools include a remote software updater, which is a new version of BSquare's existing Remote Updater management utility that now supports Windows NT Embedded as well as Windows CE. Several new device agents have been added as well. Also included is a framework for adding third-party software plug-ins through ActiveX controls or other COM objects, and BSquare's prebuilt, HTML-customizable e-mail and instant messaging applications, which now are also available as ActiveX controls. More such applications are planned, including a soft keyboard.

Lynde said that while much of the publicity surrounding the new tools has been for its usefulness in building consumer devices, "we definitely are also

serving a market for enterprise information appliances," which he said include thin clients, kiosks and devices used in vertical markets such as hospitality and banking. Lynde said that the company (www.bsquare

.com) is hoping that iWin will create markets for developers in three new areas: user interface design; application engineering creating ActiveX and COM objects; and Web-service management.

The tools are designed primarily for x86 platforms, but unsupported binaries for SA1110 and MIPS processors also are included and will be supported in version 1.1, Lynde said.

Available now, the iWin In-

formation Appliance Design Kit costs \$19,995 plus runtime royalties. With the exception of the UI development environment, which also runs on Windows NT, the iWin tools support Windows CE host platforms. ■



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Tryllian Spies Agent Market

Agent Development Kit offers promise of Internet revolution

BY EDWARD J. CORREIA

With the promise of redefining how people and businesses will use today's networks, Tryllian B.V. has released the Agent

Development Kit (ADK) 1.1, a Java-based development framework that it says enables all manner of devices to communicate and interact securely based

on a series of personal preferences set by the user—preferences that will continually adapt to their needs and habits.

The ADK comprises two

main parts: Agent Foundation Classes, which are Java libraries that provide a set of standard behaviors in the form of "plug-gable tasks"; and the Agent Runtime Environment (ARE), a server-side module that provides the foundation for running and managing a mobile agent infrastructure. Agents can

operate independently and perform tasks with complete autonomy, if so desired. The runtime environment can be company-specific and proprietary, or be part of a worldwide community.

According to the company, the tools permit developers of e-commerce, data warehouse and work-flow management and other types of applications to create software agents that enable more dynamic use of the network. For example, while an ordinary search agent might succeed or fail, Tryllian agents can be designed to interpret search requests and return similar results along with the main results. Through prompts, the user can indicate whether the secondary results are useful, and the feedback is stored in the user preferences.

The potential for the technology, according to Christine Karman, Tryllian's president and founder, is enormous. "Mobile agents will serve

as e-commerce tools, community builders and online shop assistants, as well as function as autonomous objects for developers to build scalable applications," she said. Karman, a software engineer active in the field of artificial intelligence since 1987, has been working on agent technology since 1993. She founded Tryllian in 1998.

Based in Amsterdam, Netherlands, Tryllian (www.tryllian.com) also offers the AgentWorld environment, a global network of mobile agents that offers other agents access to countless resources and facilities, such as meeting points, marketplaces, information databases, online shopping catalogs, user groups and communities, as well as chatting and messaging services. Inter-agent communications are protected using a three-tiered approach that includes Secure Sockets Layer, Digital Signature Algorithm and personal signed data stored locally.

Available now, the Agent Development Kit 1.1 is priced at \$10,000 for five developers and includes one ARE license plus a volume-dependent, per-agent royalty. The optional AgentWorld subscription and per-agent fee, also volume dependent, are based on required application services. ■

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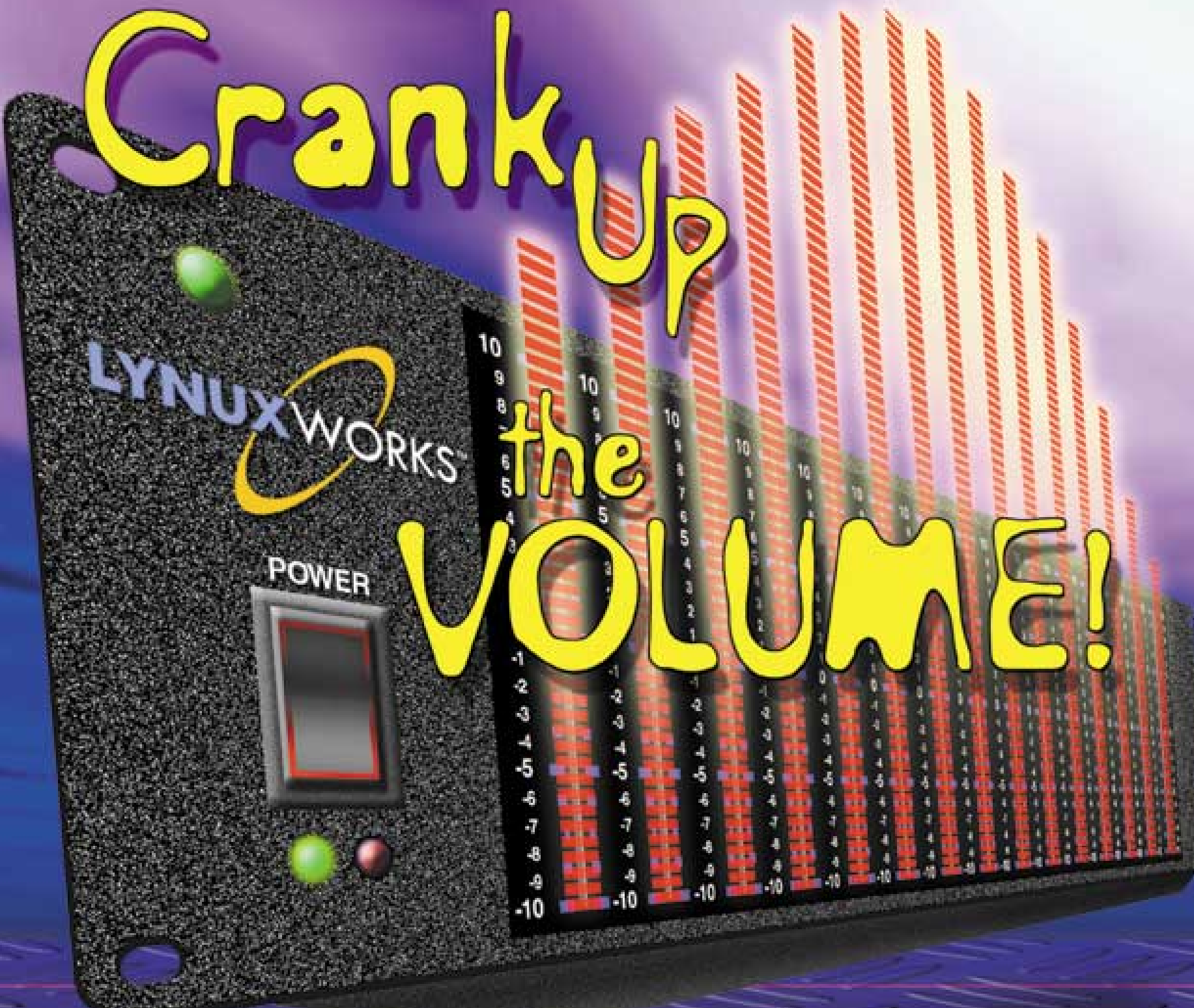
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Bigger ESC Returns to San Francisco

BY EDWARD J. CORREIA

If you're flying into San Francisco International Airport for this year's Embedded Systems Conference West, drive north—not south—when you exit the airport. As a departure from recent

practice, ESC West will be held in San Francisco's Moscone Convention Center from April 9 to April 13.

Last year's West Coast conference, held in San Jose, Calif., showed definite signs of growing

pains. Exhibitors were packed into every nook and cranny of the San Jose Convention Center, which appeared to be bursting at the seams. The Moscone Center, a much larger venue, will house its 171 classes, 95 more than last

year, plus 15 tutorials.

Added to the schedule this year will be classes revolving around embedded wireless development and integration, including a focus on security issues. There will also be classes on dis-

tributed system development, featuring a tutorial on embedded and real-time CORBA, and more than twice the number of embedded Linux and open-source platform classes as last year.

According to show organizers, the April event also will feature 91 classes never before offered, and will include topics such as Internet device design, developing with programmable logic and hardware design, including system-on-a-chip.

This year's keynotes will take several different forms. On Tuesday, April 10, at noon, best-selling author Douglas Adams, who wrote "Hitchhiker's Guide to the Galaxy," will deliver the first keynote, "Living in a Virtual World," in which he will discuss life in a world that is reinventing the future in real time.

On Wednesday, April 11, at 8:30 a.m., James Gosling, designer of the Java programming language, and Greg Bollella, a senior staff engineer at Sun Microsystems Inc., will present a demonstration of Java's real-time capability involving two independently controlled Java-enabled robot arms working together. They also will discuss Java's potential for simplifying the complexities of embedded programming and for enabling open-platform computing. ■



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- Web Services, ebXML, UDDI, & Trading Partner Agreements with James Tauber, Mark Colan, and David Turner, moderated by Justin Kestelyn
- The Importance of XML with Tim Bray, Norbert Mikula, David Orchard, and Jon Udell, moderated by Ken North
- eBusiness Problems and Solutions (Bruce Peat, David RR Webber, Benoit Marchal)
- XML Query (Paul Cotton, Peter Fankhauser, Jonathan Robie, Michael Rys, Jérôme Siméon)
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Wednesday, 9:30 a.m.-4:30 p.m.

Thursday, 9:30 a.m.-4:30 p.m.

EXHIBIT HOURS:

Tuesday, 1 p.m.-8 p.m.

Wednesday, 9:30 a.m.-7 p.m.

Thursday, 9:30 a.m.-3 p.m.

KEYNOTES:

Tuesday, Noon-1 p.m., Keynote I:

"Living in a Virtual World,"
Douglas Adams

Wednesday, 8:30 a.m.-9:30 a.m.,

Keynote II: "The Future of Real-time
Java," James Gosling and
James Bollella

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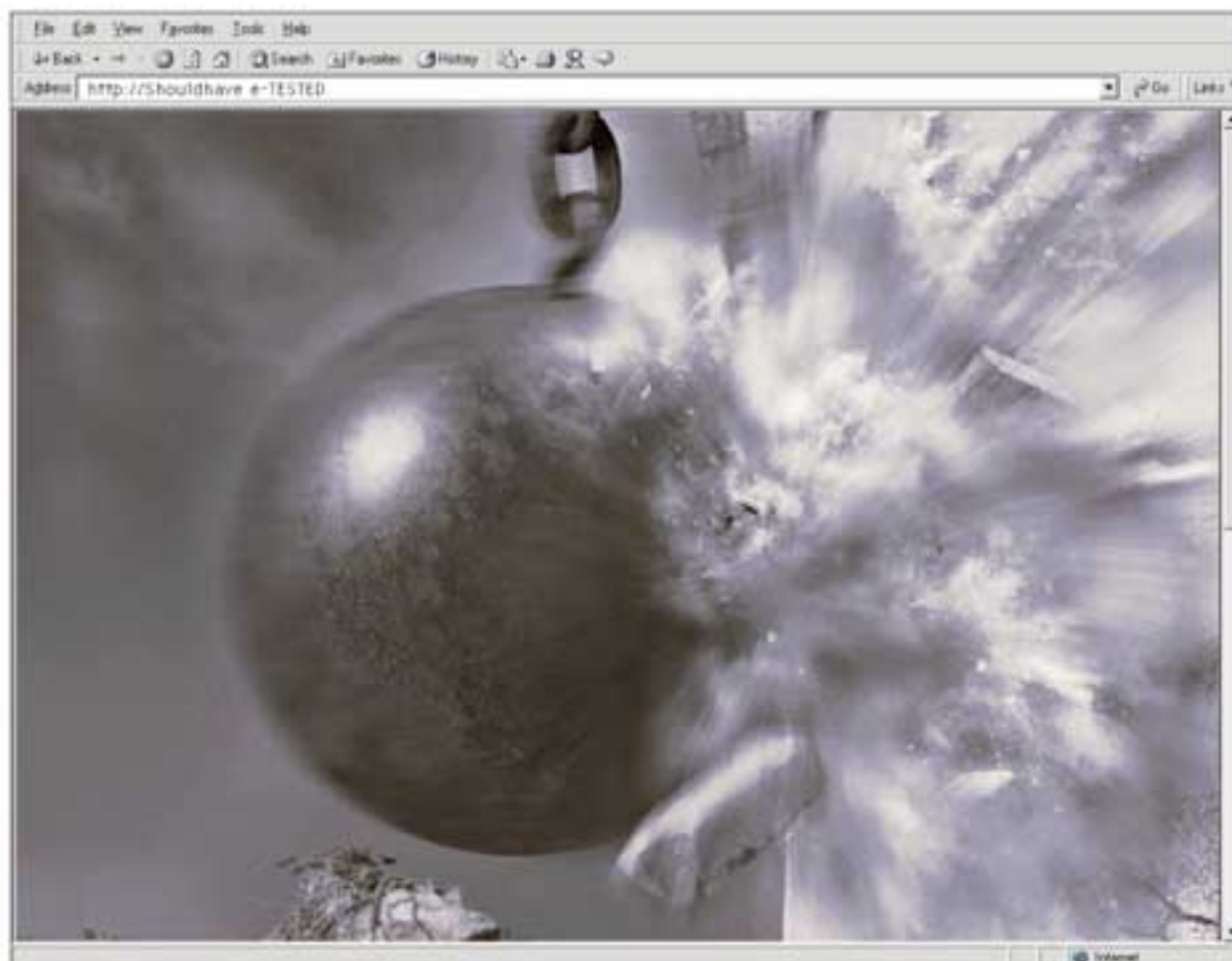
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Aspirin for the Headache

New tools, services aim to streamline the software unit testing process

BY LISA MORGAN

Testing is one of those processes that developers would prefer not to talk about—let alone do. Unit testing is considered a waste of valuable time by many developers. System testing is a painful, iterative process that frustrates programmers and QA departments alike. Is the pain at an end? New testing solutions, methods and services are providing easier means of ensuring quality throughout the development process.

The nature of the tests themselves has dictated who is responsible. In most development shops, programmers have had to do their own unit testing because they have a much deeper understanding of the code they created than the testing and quality assurance departments do. The problem is that developers like to create, not test. Testing means time away from coding. The thought of writing a few thousand lines of code just to test a single function is about as inspiring as a trip to the dentist.

Testing also identifies problems, which means if errors are detected, the developer now has to fix the code. Some developers also don't like the notion of testing because they feel their work is being criticized and their work



performance is being monitored.

"Developers like to think they don't have to test their own software because they're so bright," said Phil Wilkerson, CIO at Zoho Corp., a Santa Clara, Calif.-based business-to-business exchange. "Unit testing is perceived as slowing them down."

He said the good developers will turn their debuggers on and test their

programs, but when multiple developers have to merge their software and something doesn't work, people start pointing fingers.

Then there are the process and political problems with system-level testing. Developers throw their code over the fence to QA, which tests the software. When an error occurs, the QA department is generally not equipped to

explain the cause of the problem, only the effect. As a result, developers have to find the root cause of the problem and fix it, then submit the code back to QA. It's an inefficient process that often results in long weekends or missed release dates.

"The R&D guys love to create but don't necessarily care if their stuff works," said Jonathan Rende, vice president of product marketing for testing at Mercury Interactive Corp. "The QA guys are concerned about how the customers are really going to use the product. The different perspectives create tension."

TAKE THE PILL EARLY

Testing vendors and application service providers say the way to alleviate the traditional headaches associated with testing is to build in quality from the beginning. Naturally, vendors want to sell tools, where ASPs want you to outsource the testing functions to their hosted software.

Testing should not be completely outsourced, both vendors and service providers say, unless you work for a very small company that has no testing capabilities. Unit testing is best done by the developers themselves. System testing

► continued on page 27

FORGET TESTING, PREVENT DEFECTS

Bruce Boes, vice president of marketing at Upspring Software Inc., explains why the testing process is evolving. In fact, he says his company doesn't do testing; it does defect prevention.

SD Times: Why do you say your company does defect prevention instead of testing? How do they differ?

Bruce Boes: There's a difference between quality control and quality assurance. That's the root of the issue, in general. Finding problems after the fact is inefficient. You need to prevent them.

Can you give us an example?

Do you remember the 1980s when Japan was giving the U.S. some serious competition in the automotive industry? They offered quality and cost advantages. [As a result], people in the U.S. bought their cars instead of domestically produced ones. [The Japanese] designed quality in from the

start. This not only resulted in better products, but also helped them to reduce their costs.

Why isn't that happening in software development shops?

When it comes to software, the question is, who's in charge? Developers or the test/QA department? In the car industry, quality is a separate discipline. People need to be chartered with quality. That means putting standards and processes in place.

What's wrong with current testing procedures?

The developers write; the testing department finds bugs. Someone else fixes it because it's cheaper to have a kid out of school fix it than the developer. No one gets the whole picture.

How is Upspring solving the problem?

We offer tools that intervene early in the cycle, and we provide rules and standards. That way, developers have to

worry less about finding commas that are out of place. Our tools help facilitate the development process.

Are you suggesting that testing earlier is going to make developers happier?

They get in the habit of writing better code, which saves them time. When the developer checks the code, the system forces him to press the button after the repair. We help answer the question, does the code run? Does it do what it's supposed to do?

Whom do you consider responsible for software quality in an organization?

The responsibility for quality is with the president. Some of them are still afraid of software, though. Until they become responsible for being proactive about quality, they can't expect testing to solve the problem. Software quality is a benchmark by which you can determine how your products, your company and the industry stack up.

Bruce Boes, Upspring Software Inc.



You said the Japanese auto makers saved money by building in quality. Do you think the same is true for software?

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You said the president of the company is responsible for quality. Are you selling to any presidents yet?

Not yet. We have a lot of educating to do.

—Lisa Morgan

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ASPIRIN

◀ continued from page 25

can be outsourced if a QA department doesn't exist or your company doesn't have the resources to do certain types of testing, such as load testing, on a grand scale.

"There are a lot of errors you can find from a load perspective, like inefficient bandwidth utilization, poorly distributed load balancing behind the firewall, or database servers that aren't tuned properly," said Mercury's Rende. "Sure, you can throw additional hardware at some of these problems to solve the scalability issues, but that's prohibitively expensive."

Steve Caplow, director of marketing and business development at test-tool vendor Empirix Inc., said that, from a testing perspective, scalability is a recurring theme in applications that are developed for the Microsoft and Oracle platforms because the architecture of the applications is so similar.

Vendors and service providers recommend putting quality first, not only in terms of software development but as a matter of business management. The directive for product quality has to come from the vice president of engineering or other development executive, and the president of the company should make quality a priority.

Zoho's Wilkerson is one such executive who is making quality a priority at his company. For starters, his B-to-B exchange is 100 percent Web-based and ties into back-end servers like SAP. If errors occur, they will show up on the users' screens.

"We can't take chances and get it wrong," he said. "We're supporting companies like Harrah's and Grainger.com who need to know their data is secure and can be accessed reliably."

Wilkerson argues that testing should be a priority for software, just as it is in the hardware and consumer industries. The airline, financial-service and drug industries make product testing a priority out of necessity. Many consumer and business product companies compete in the market based on quality. The difference with software is that most developers don't see the end impact on the customer.

Wilkerson is also trying to avoid the prerelease fire drills that occur when the QA department finds bugs at the eleventh hour.

"When you're in constant crisis mode, it demotivates the staff," he said. "The truth is, we're all in this together, so why not approach it that way?"

Wilkerson's QA department reports directly to him because he considers it the most important part of his organization. Not only does his QA depart-

ment test applications, it also tests data loads and the call center. As a result of his focus on quality, Wilkerson is also hiring what many development teams would consider to be atypical test engineers. Instead of hiring kids out of school or people without computer science degrees, Wilkerson often

hires former engineers who understand programming so they are capable of adding value at both the system and unit testing levels.

"Our quality-service group is capable of doing more than just press-the-button black-box testing," he said. "They do white-box testing and black-box testing

so they can make recommendations to the developers."

BLACK AND WHITE

A lot of people are confused about white-box testing and black-box testing, mainly, vendors say, because it sounds a lot like white hats and black hats.ts.

▶ continued on page 31



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Testing Tools, at Your Service

BY LISA MORGAN

Vendors and service providers are making it easier for software development teams to build quality in, rather than just test for quality. Here are a few prod-

ucts and services that can help you take the pain out of testing.

EMPIRIX INC.

Empirix (www.empirix.com) offers the e-Load, e-Tester and

e-Monitor test suite, as well as the Bean-Test automated test suite. e-Load measures the effect of the load on application performance for the purposes of scalability; e-Tester provides

functional and regression testing; and e-Monitor tracks application performance continually following deployment. The suite is designed to support testing throughout the software development life cycle and comes with free advice: Test early and often. Bean-Test automatically generates a Java test client for

Enterprise JavaBeans and also provides load testing and reporting capabilities.

FLASHLINE.COM INC.

Flashline's (www.flashline.com) QA Lab outsourced service is also being used as a reference point for internal QA processes. The service prioritizes bugs in Java code and also tests design quality, providing cyclomatic complexity, fanout, the number of methods and classes and the size of classes.

QA Lab provides three levels of testing. Pass One provides a white-box test. Pass Two goes to the heart of a program to identify inefficiencies in memory usage and execution time. Pass Three generates large execution threads and provides load testing, so shops can scale an in-house test of 40 users to 4,000.

MERCURY INTERACTIVE CORP.

Mercury (www.mercuryinteractive.com) provides both tools and testing services. Test-Director is a packaged application that helps software development teams manage requirements, plan tests, run tests and identify defects.

The tool is Web-based, and the data resides in a central repository so it can be used by geographically dispersed teams. After R&D or customers define their requirements, it allows developers to link those requirements to tests so the results can be compared with the original requirements. It also allows developers to design dependencies, so, for example, in a flight-reservation system, the user is prompted to reserve a flight prior to deleting it. Without these kinds of dependencies, it would be possible to delete the flight before booking it.

The defect-management module identifies defects and reports back on the severity of errors. Based on the results, QA can decide whether or not a product is ready to be released.

Also from Mercury is Load-Runner, a load-testing tool that predicts system behavior and performance. It emulates thousands of users to identify and isolate problems associated with concurrent use.

PARASOFT INC.

ParaSoft (www.parasoft.com) offers J-Test, an automated Java testing tool that provides white-box, black-box and regression testing. It also enforces coding



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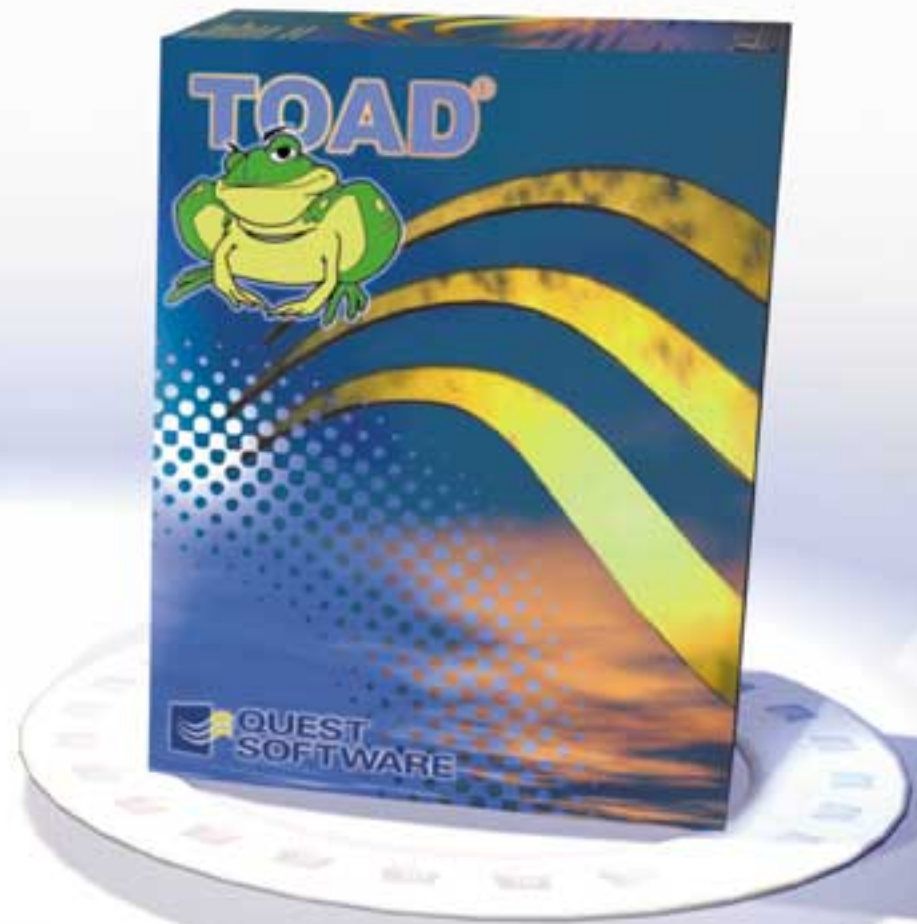
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ASPIRIN

◀ continued from page 27

In truth, it's not that simple.

Black-box testing ensures that the product does what it's supposed to do. That's what most QA departments do. It results in a yes or no answer and is not meant to explain the root cause of the problem. White-box testing, on the other hand, is unit-level testing that reveals the root cause of errors.

TESTING TOOLS

◀ continued from page 28

standards to ensure quality throughout the software development life cycle. The white-box testing feature automatically creates stubs to test classes, and the black-box testing compares the code with the original specifications. Regression testing is done at the class level so that quality can be assured earlier in the development cycle.

The company also recently updated its Web load-testing software, WebKing. The new version 3, designed to improve the reliability of dynamic *n*-tier Web sites, also works to improve the efficiency of the development process, according to ParaSoft, such as by validating XML documents, and automatically deploys and tests programs as soon as they are completed so developers can prevent errors by testing early.

UPSPRING SOFTWARE INC.

Upspring's (www.upspringsoftware.com) QA Cockpit provides programming rules and standards and then tests against them. It identifies noncompliant instances prior to compilation and quantitative analysis of software. The metrics can be used to quantify errors at various stages of a project, to compare one project with another, or to compare one company's quality against another.

The Magnify for Quality service runs Upspring's rules against code and prioritizes the errors so developers know what to fix first. According to vice president of marketing Bruce Boes, Upspring typically finds 20 defects per 1 million lines of C/C++ and Java code. The service is being used by companies acquiring software, software company investors, outsourced development teams and those within companies, either to benchmark quality or as a "sanity check." ■

"You have to build quality in, which means preventing defects rather than identifying them after the fact," said Bruce Boes, vice president of marketing at Upspring Software Inc. "People need to be chartered with quality in terms of standards and processes."

According to Boes, 50 per-

cent to 60 percent of errors are syntactic, but developers naturally avoid testing because they hate being monitored. Boes suggests being more proactive about quality so that developers write better code as opposed to just being checked.

"If you're just testing at the end of the cycle, you're testing

the symptoms and not the cause," he said. "Fixing the symptoms is expensive and inefficient. You have to fix the root cause of the problem. Unfortunately, the software industry is just starting to address these issues."

Empirix, Mercury and Upspring, as well as Flashline.com Inc. and ParaSoft Corp., are just

a few examples of testing vendors and service providers that are stressing quality first throughout the entire life cycle of software development. The result, they say, is better products, fewer headaches and reduced time-to-market—benefits that are music to a development manager's ears. ■

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EDITORIALS

Crashing the Test

They're often the least appreciated member of the software-development team, lacking the high visibility of code-slinging gurus or software architects. Yet, without QA professionals, software quality would suffer.

There are many ways to build quality into software products. The most common is when a team of programmers builds code, which is then passed to a team of quality-assurance testers who try to determine if the code performs its intended function without containing any unanticipated bugs.

This approach is fraught with peril. QA testers are often pressured by programmers and management alike to work more quickly and to focus on functional testing while being less thorough in bug-swatting. Since whenever QA finds a problem with the code, it means delays for deploying the new software, there is also a short-sighted implication in many organizations that the QA team shouldn't look too deeply. This is particularly prevalent in Web development projects; far too many have no formal QA process at all, short of asking some co-workers to browse around the Web site.

Although the recent news that the U.S. Dept. of Defense short-circuited the testing process of the V-22 Osprey tilt-rotor helicopter doesn't necessarily point to a software-development problem, it does suggest that when the project gets behind schedule, the testing process is seen as an easy place to make up for lost time and save a few dollars. A General Accounting Office director complained, "In contrast to best commercial practices, our work has shown that numerous weapon system programs suffer from persistent problems associated with late or incomplete testing." The GAO may not realize that commercial development projects suffer from the same flaw, although the resulting system crashes typically don't endanger human life.

What can be done? Businesses managers must realize that testing is not an afterthought or luxury; it is a fundamental part of the software development process. Budgets and schedules must be adequate and untouchable, with more than lip service paid to quality goals. Testers should be given both official and unofficial permission to root out every flaw in the program, whether it's a functional error or a bug—and that often means organizational changes, where testers do not report to the programmers whose work is being tested. And the QA department should be given sufficient tools and training to do the job right.

Continuing Consolidation

If you thought that 2000 was bad for many high-tech businesses, 2001 is shaping up to be more of a challenge. But those challenges can help the survivors position themselves for the next boom.

While formerly high-flying "new economy" dot-coms flutter and fail, many companies in the software-development space are on a buying binge, snapping up smaller firms to build a more solid technology portfolio. Starbase Corp., formerly a small player with a set of collaborative development tools, started an acquisition binge in 2000 and purchased two more companies in February 2001. The name of the game, these days, is market consolidation. Look for more of your preferred vendors to join forces this year, as they try to leverage the economic downturn into an opportunity to build market share. ■

GUEST VIEW

HIGH-WIRE APPLICATIONS WITHOUT A SAFETY NET?

The demand to release software "on Internet time" has compressed development cycles, so that six- to 12-month software releases are no longer acceptable—quarterly releases have become the norm. That means software is not as systematically tested as in the past, making deployment riskier. When did you last hear of a 12-month beta test or an organization that had the time and resources to perform extensive unit tests, integration tests, system tests, volume tests and so on?

Compounding the problem, a lot of code is not even under the control of the development organization. Because of the much-hyped (and in many ways admirable) component revolution, most software includes many third-party components. A program is no more reliable than its least reliable component. How much do you trust all of your component suppliers to meet your own reliability standards? In addition, Web applications often are front ends to legacy systems, exposing reliability and scalability problems that might previously have been tolerable in the legacy systems.

The bottom line is that almost all software ships with significant bugs and performance limitations. The demand for faster software development combined with the use of legacy and third-party code means that companies need approaches that automatically ensure the availability of their deployed applications.

TRADITIONAL APPROACHES: TEMPORARY AND COSTLY

Corporations often attempt to improve application performance and reliability by adding hardware. However, studies show that most application failures are software related, so hardware upgrades don't address the real problem. Moreover, existing applications often cannot take advantage of new hardware. For example, switching to expensive SMP servers will not boost performance if the application isn't configured to take advantage of the parallelism that such servers offer. Spending money on pricey new hardware is more likely to mask availability problems than fix them. The problems often reappear when the system stress increases, resulting in failure at times of

peak load, when the cost of system downtime is most severe. Adding hardware also adds complexity to a systems environment, increasing risks and cost.

Alternatively, IT organizations often try to improve application reliability and performance during the development process, adding developers, debugging tools and testing cycles. Writing reliable software is a laudable goal, but the fact remains that almost all software ships with bugs that appear only when the system is deployed in the field—not during development. Every release is a gamble, with everyone hoping that no unexpected problems occur.

Finally, systems management tools are often billed as providing availability management, but their focus is on reporting and managing. They don't automatically speed up programs or stop them from crashing.

MAKING SOFTWARE SELF-REPAIRING

There are new technologies that can automatically correct errors and optimize performance in existing programs while they are running—providing a safety net for the high wire. At the end of the day, software will invariably be imperfect. Because unanticipated problems always occur, there needs to be a solution to protect the availability of existing deployed software running on existing hardware.

One important safety net is to protect applications with an automatic memory manager. Almost all programs have memory errors, and memory management is one of the most common causes of software performance bottlenecks. Injecting an automatic memory manager into an application does not require changing the application's source code. With an automatic memory manager, most programs will automatically run faster, use less memory and crash less often.

How does it work? Automatic memory managers replace the application's existing memory subsystem with a high-performance, parallelizing, error-correcting memory manager. The high-performance allocation speeds up the processing of objects and

reduces paging, while parallelization can dramatically increase performance and reduce cache contention on SMP servers. The error-correcting component uses garbage collection to automatically fix memory leaks, premature frees, double frees and wild frees. Adjustable padding can protect against short memory overwrites and off-by-one errors.

Injecting automatic memory management into a deployed application works with minimal disruption, requiring no changes to existing hardware or software. Applications that may have undiagnosed problems during development no longer have to be compromised by these destructive errors once the application is deployed in a production environment.

Some developers argue that their programs don't need automatic memory management and that the memory-related software issues discussed here don't apply to top-notch programmers.

Even if they are right, a safety net always reduces risk. At worst, automatic memory management does no harm. At best, it can prevent catastrophic system crashes. When the Toronto Stock Exchange had to halt trading in 1997 due to a memory leak, think how much better off they would have been if an automatic memory manager was protecting them "just in case." Shouldn't business-critical applications be protected from equally destructive memory problems, so that a costly crash cannot occur? It's no joke that unscheduled outages cost U.S. companies an estimated \$4 billion annually.

Automatic memory management is the safety net that high-wire corporations are seeking for their deployed applications. As businesses search for ways to improve the performance and reliability of their critical business applications, they should consider automatic memory management a key component of their technology strategy and plans. ■



MICHAEL SPERTUS

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ANALYZING FUNCTION POINTS

How big is this project? That's a hard question to answer when it comes to applications development. But it's an important question, because unless you know how big a project is, you can't estimate its costs or development schedule accurately. You can't assess its quality fairly, or see if your organization is getting better—or worse—at handling projects of this size, or compare a development team's efficiency against other teams within your enterprise or against industry norms.

Back in the mainframe era, the crude methodology was to measure a project's complexity by counting lines of code, and determine a development team's effectiveness by tracking the man-months it took to build the program. These days, lines of code, lines of code per programmer per day, and person-months are no longer accepted as meaningful measurements. For the past 15 years or so, the industry's best yardstick has been an application's function-point count, and a team's efficiency has been measured by the number of person-hours per function point, and software quality by bugs per function point.

Yet unlike counting lines of COBOL code, it's hard to count the function points in a complex application, and seeing that complexity, many senior development managers and IT directors simply ignore the metric, and stick with counting lines of code. That's why IBM Corp., which invented the function-point concept in the late 1970s, created an independent organization, the International Function Point Users Group (www.ifpug.org), to shepherd, simplify and promote

function points to the broader software-development universe. And that's why David Garmus and David Herron, two software-metric consultants, have written "Function Point Analysis: Measurement Practices for Successful Software Projects."

What is a function point, anyway? One of the few weaknesses in Garmus and Herron's book is that they don't even get around to discussing that rather obvious point until halfway through the text—and even then, they can't just come out with a clear and unambiguous definition. But briefly stated, an application's function points are the sum of the different data types and sources used by the application (both internally generated and externally referenced), and the transactions and transformations applied to those data sources. Different weights are applied to different types of data and transactions, and some organizations also factor in so-called "general system characteristics," such as required real-time performance, online data entry, code reusability and requirements for easy installation, to increase an application's function-point count.

The authors' primary audience is for the practitioner: the individual charged with learning all about function points, counting them and presenting the analysis to top IT management. However, any manager who is considering the use of formal function-point analysis to help instrument the software-development process, or who is part of an organization that uses

function points, should have a good understanding of exactly what a function point is—not just to help with interpreting the analysis, but also because the entire concept of a function point is bound up with the parts of a piece of software that are hard to design, write and test.

The first five chapters of "Function Point Analysis" build the case for the use of function points. The arguments are no less persuasive because they're familiar: Unless you can define and measure a process, you can't determine its cost and efficiency, and unless you know its efficiency, you can't quantitatively

and qualitatively improve the process. Written largely for managers, the third chapter in particular points out how function-point counts can be used to track an application development project's productivity, quality and financial costs, and also to estimate how hard it will be to maintain—the authors make the compelling point that for any development organization considering outsourcing new code development or maintenance, function-point benchmarks are a valuable tool for calculating ROI and for creating service-level agreements.

The next major section delves into the process of counting function points. It's a maze of two- and three-letter acronyms for concepts like DETs and FTRs (data element types and file types referenced), ILFs and EIFs (internal logical files and external interface files), and then its EIs, EOs and EQs (external inputs, external outputs and external queries). Techniques for counting those acronyms constitute the essential elements of function-point analysis and can be used to derive the fundamental measurement,

the unadjusted function-point count. Through these chapters, Garmus and Herron skillfully lead the reader through a minefield of do's and don'ts, some of which can be quite unintuitive and even bewildering.

One area in which more guidance would have been appreciated is the discussion of modifying the unadjusted function-point count by applying subjective "general system characteristics." Garmus and Herron make the point that a growing minority of organizations have chosen to ignore this particular process, called the value adjustment factor. I wish they'd provided clear advice: Should you use them or not?

The remainder of the book contains advice and advanced techniques for adapting function-point analysis to the modern world of the Web, GUIs, and object-oriented software. When the technique was first pioneered more than 20 years ago, applications were batch oriented and used structured programming techniques, and "code reuse" meant a library of standard subroutines. Garmus and Herron show where some aspects of function-point counting have lagged behind the state of software development.

Is function pointing for everyone? No. Is it a useful measurement? Yes. If you're familiar with function-point analysis but want to know more, or if you don't know anything about it beyond what I've written here, then this book represents the best single work on the topic that I've found. ■

"Function Point Analysis: Measurement Practices for Successful Software Projects," David Garmus and David Herron. Addison-Wesley, 2001. Trade paper, 363 pages, \$39.95.

Alan Zeichick is editor-in-chief of SD Times.



BOOK WATCH
ALAN ZEICHICK



LETTERS TO THE EDITOR

EBXML OR UDDI/WSDL

Larry O'Brien, in his Feb. 15 article ("XML in the Machine," page 5), made this comment about UDDI/WSDL: "Web Services Description Language (WSDL)...appears to be gaining more acceptance than ebXML." I am curious to know if that statement is purely subjective or if Larry has some evidence that UDDI/WSDL is in fact gaining wide

acceptance. After having waded through the ebXML stuff and a little of the WSDL stuff at www.alphaworks.ibm.com, I found WSDL much more desirable, or at least accessible. However, in my environment I've been hearing most of the chatter about ebXML, while WSDL has hardly been mentioned.

Ken Gettler
Keng Systems Inc.

Larry O'Brien responds: *The race is still too early to call and my comment was subjective, but it's my strong sense that UDDI is succeeding. I admit that there's no buzz yet associated with WSDL; I think that people are still working their way up the protocol layers on their way to building Web services. ebXML, of course, is attempting to be a complete solution, so if enough people embrace it early and don't find any killer weaknesses, there will be significant lock-in.*

CLARIFICATION

Segue Software Inc.'s SilkPerformer has offered script record/playback features since version 3.0. Those features were not introduced in 4.1, as originally reported to SD Times in the Jan. 15 issue ("Web Tester Enhanced With DCOM," page 12).

Letters to SD Times must include the writer's name, company affiliation and contact information. Letters may be edited and become the property of BZ Media. Send to letters@bzmedia.com, or fax to 516-922-1822. Please mark all correspondence as Letters to the Editor.

SD Times

Software Development Times
March 15, 2001 - Issue No. 026

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applied for January 2000.

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O PROCESS, WHERE ART THOU?

A colleague looking for work recently bemoaned the lack of software engineering process he was seeing at the companies calling him in for interviews. "Doesn't anyone do process management?" he asked. "Of course some businesses do," I assured him. "It's just that you're statistically unlikely to be hired by any of them." The sad truth of the matter is that despite the profuse coverage of software processes from the Rational Unified Process to Extreme Programming, most teams building software are doing so in a chaotic manner and will continue to do so in the near future.

Software process management is not rocket science; it's simply having a set of plans for dealing with the essential task of software engineering—turning a usually vague concept for a system into a set of effective machine instructions in a reasonable amount of time. Process doesn't have to be bureaucratic—undirected lone-wolf hacking sessions are a valid thing for some people to do some of the time, as long as the development team has the discipline to review and rework the code before checking it into the main build stream. The big trend is toward "lightweight processes," such as Extreme Programming

(XP to its friends). XP, which is generating a cottage industry of books, conferences and consulting, is explained at www.extremeprogramming.org. It differs from most software processes by emphasizing code construction as the main activity throughout all stages of development.

You aren't going to find a single manager in the country who will say "process is not needed." You might find *programmers* who will say that—usually programmers who have experienced "analysis paralysis," a situation in which the endless possibilities associated with a nascent software system are hashed out in endless meetings. I've criticized before in this column the "perfect technology assumption" that contributes to this type of paralysis. Executives will inevitably pay lip service to process, and then be the first to sacrifice it to market pressure. Weak-spined development managers, who don't understand that overtime doesn't work (if you get 150 productive hours per month from your employees, you will have more productivity than 90 percent of engineering teams) and know that their time estimates are in jeopardy, fold like soggy cards. The team

becomes purely reactive, the code gets out of control, the project gets in trouble, and the company starts searching for hires.

Let's face it; most hiring happens when things are going wrong. If a company has a well-managed process, they are working their staffing ramp-up two months or more before there is an acute need, and, usually, if things are running well, the engineers are eager to bring in old friends. All software processes respect the law that

Fred Brooks laid out in "The Mythical Man-Month," which says that "adding manpower to a late software project makes it later," as opposed to executives and weak-spined development managers in troubled projects, who hire profusely (even though they know the project won't work, they figure they can shift the blame from their own incompetence to the HR department and to the engineers).

This presents a conundrum to the job seeker; like Harpo Marx, you don't want to be a part of any organization that would have you. I wish I could offer a way out of this, but the truth is that job seeking sucks. If it's any consolation, hiring sucks, too, trying to get a glimpse of insight into a person's actual ability in an endless stream of phrases like "Responsible for design and implementation of a..." and

"Software used included...." Why can't the software engineering world adopt the concept of portfolios? I can tell more from 20 lines of code than I can from a five-page résumé. And if a candidate ever asked to see the company's process standards and project Gantt chart, I'd know that they took their profession seriously.

This is more evidence that, in five years, all good software engineers are going to be consultants. My colleague looking for work has decided to go down the consulting road himself. His consulting group will be a small group of good engineers, and they will use XP to tackle projects. The odds are good that they'll be successful at their first project and, once that hurdle is cleared, they'll probably not go back to being regular employees again.

That's one more handful of good engineers removed from the corporate career chain and no longer on the route to engineering management. It's another pebble shifted from one side of the scale to the other. A slightly more competent world of consultants, a slightly less competent corporate software world—think about it. ■

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QUESTIONS FOR THE OPEN-SOURCE GURU

It was the third day since we left base camp to achieve the summit of Mt. Raymond. Roped together as always for safety, we heard the winds howl fiercely as we faced fields of scree, crystalline blue ice flows and vertical rock faces towering hundreds of feet. Our fingers and toes grew numb in the subzero temperatures.

Then suddenly we were on the summit. The wind dropped and an eerie stillness prevailed as members of the expedition took turns photographing each other with nothing but achingly blue sky as a backdrop.

I dropped my pack and approached a hut perched precariously at the edge of the peak. I glimpsed a hand-lettered sign and my breathing quickened. My faith was rewarded; the travails and hazards of the journey were about to be justified. The sign said "Open-Source Guru."

I stood outside the hut for just a moment before the guru's head popped out. "Come in, come in!" he cried. "Do you lack the sense to come in out of the cold?" I followed him inside.

There was just room enough for two folding chairs and a table with a camp stove on it. I accepted steaming tea in a chipped cup and sipped it gratefully.

The guru gave me an appraising look. Then abruptly he set down his cup. "So," he said in his oddly brisk manner. "You have come to the mountaintop to inquire of the guru. Your need for information must be very great."

I shrugged. "Information is easy to

come by, Baba," I said. "What I seek is somewhat harder to find."

His eyes twinkled. "Ah, you hope to find meaning," he smiled. "The search for meaning is a path each man must tread alone."

"Even so," I replied, "it is said that the guru of the mountain helps open-source hackers achieve understanding."

The guru favored me with an inscrutable half-smile. And silence.

"Baba," I said at last, "I am troubled by Amazon's patent on one-click shopping. Does the patent really mean that no e-commerce site can implement a streamlined order-entry application for frequent customers?"

The guru smiled. "You must ask Apple," he said.

He saw my vacant expression and began to explain. "Amazon's lawsuit against Barnesandnoble.com, filed in October 1999, alleging patent infringement because the rival bookseller had installed a single-click buying option on its e-commerce site. Amazon contended that it and it alone held the patent on one-click buying—and a U.S. District Court justice issued a preliminary injunction barring Barnesandnoble.com from offering one-click shopping."

"Yes," I said, "but you said Apple—"

"In September 2000, Apple licensed one-click from Amazon so it could implement the feature on its Web site,"

the guru said. "Think about the precedent it set. Now Amazon can say that this utterly obvious and straightforward e-commerce feature is proprietary and must be licensed."

"And what of the Napster ruling, Baba?" I asked.

"Napster is history," the guru intoned. "Those who hope for its revival are misguided. Information may want to be free, but the government will continue to enforce copyright laws."

"Is there nothing to be learned from the Napster phenomenon?"

"Ah, you have finally asked the right question," the guru said. "Napster was the first hint of the power of distributed peer-to-peer computing."

"The technology model," I said, nodding. "Like the SETI@Home project."

The guru smiled. "Intel was an early believer in the peer-to-peer vision and formed the Working Group on Peer-to-peer Computing last year."

"That's the group scheduling endless meetings in a search for standards," I said. "Any progress yet?"

The guru gave me a rueful smile. "There has indeed been progress. But not from Intel's group. From Sun."

I was stumped again. The guru seemed to be enjoying this.

"Sun's answer to Microsoft's .NET platform," he said, "turns out to be the Jxta project, a set of services for establishing and organizing peer-to-peer computing networks."

"Well, if it's Sun, it's likely to be

proprietary," I observed.

The guru laughed. "Open source," he whispered. "Sun will release the software and specifications under the Apache license."

"How does this relate to Sun ONE?" I asked.

"Jxta is a big part of the technology that will make Sun ONE run," the guru said. "You'll be able to download the code in April from CollabNet."

"What does this mean for .NET?" I asked.

"Microsoft dominated the PC age," the guru said. "But new architectures—maybe based on peer-to-peer computing or ASPs—will dominate the Internet era. Operating systems no longer make much difference."

"So is Microsoft's sun setting?"

"Who can say?" The guru shrugged. "The company has become shrill in its denunciations of Linux, but had to scrap a multimillion-dollar ad campaign for Web-based computing when its servers went belly-up. And now the central gem of its Web strategy, .NET, is facing competition from an open-source alternative. No wonder there have been shake-ups in the executive offices."

I nodded. "Thank you, Baba," I said, putting down my teacup. "I have much to contemplate."

He smiled cryptically. I let myself out, into the crisp air, to begin my descent. ■

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WEB WATCH



LARRY O'BRIEN

OPEN SOURCE



J.D. HILDEBRAND

FROM WHISTLER TO WINDOWS XP

How do they come up with these code names? Bill Gates whistling on the way to the bank? Probably not, seeing as how he lost about \$60 billion in one year. Maybe it was named after the unfortunate soul who blew the whistle on Microsoft and called the Justice Department. Then again, maybe someone was trying real hard to think of a cool code name and just gave up.

However it happened, Whistler got a name change last week when it was introduced to the world as Windows XP. Considering the hype pouring forth from Redmond prior to this unveiling, I was disappointed by what finally emerged. Basically, it's still Windows 2000. Hey, guys, businesses are still getting used to Windows 2000. Give us a little time to breathe between operating-system upgrades, okay?

Which brings up an interesting point. From Bill Gates' demonstration, it was obvious that Microsoft intends the initial release of Windows XP to invade the home-use arena. But then it went on to add that machines running Windows 95 (and probably a chunk of those running Windows 98) wouldn't be able to upgrade to Windows XP. Only clients running Windows 2000 Professional were said to be reliably upgradable. Con-

sider that Windows 2000 only recently made real headway into the office; home users have been much slower on the uptake. "Buy a new machine, or be prepared for problems upgrading," is not what home users want to hear.

And following that statement came the bombshell that a separate version of Windows XP is on the way—this one optimized for office professionals. Office professionals? You mean all those corporate users who just a few months ago moved to Windows 2000 Professional? Now they're supposed to do it all again for XP? I don't think so.

Not to mention that Microsoft showed very little during its XP demo to entice office users. An upgraded Windows Media Player and improved capabilities to transfer fat personal photographs across the network is not what I consider an attractive feature in a corporate client operating system.

I did hear something during the demo about an embedded ability to take control of another user's machine across the LAN or even the Internet. Microsoft obviously intended this as an improvement to systems support and diagnostics. I agree on the concept but am shuddering inwardly when I think what all

those VBA, VSA and VB.NET virus writers are thinking about doing with it. Microsoft had better coat the security on that one with Teflon. And hasn't anyone at Microsoft heard of pcAnywhere or any of the other remote-control packages? This feature has been available on corporate PCs for years.

Other than this little tidbit, however, there was no real news for corporate users, software developers or systems administrators. No word on how Windows XP will integrate with Windows 2000 Server, Active Directory or BackOffice 2000. Nothing of note on how it will work with .NET. This has caused a stir in the media community—something that took me a bit off guard.

Frankly, I wasn't expecting any .NET news for Windows XP and am somewhat surprised by all the hubbub about the fact that .NET wasn't much mentioned during the new operating system's introduction. The fact is that XP looked more like an evolutionary upgrade to Windows 2000. Bill Gates made a big deal out of the \$1 billion they spent on R&D, but all I saw was some improved multimedia features and (possibly) some faster performance over Windows 2000 (the latter really being a requirement anyway). Maybe beta 2 will blow my socks off, but for now I'm appreciative of

the effort, not starry-eyed with wonder.

The .NET Framework, on the other hand, is a much more revolutionary undertaking for Microsoft, not only in its determination to spread the XML, unified IDE and C# gospel, but also in that somewhat vague description of service-oriented software sales. This is not something that Microsoft will simply "switch on" with the iterative release of a new client-focused operating system. Re-educating its customers on how they buy and implement software takes time and user-acceptance testing before Redmond will invest serious resources and direction.

As Microsoft representatives have admitted, the company is facing threats on multiple fronts—Linux and the open-source movement, MacOS X, as well as its continuing feud with the U.S. government. Now is not the time to take uncalculated risks. Windows XP is a step up over Windows 2000 in the home—this spin has some problems in my opinion, but it's an expected development. The .NET initiative, on the other hand, will rock the worlds of not only the development community, but also the user community. Even the juggernaut Microsoft marketing machine needs to tread softly here, and for once I think they know it. ■

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WINDOWS WATCH



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SUN WON? SURE! SUN ONE? FEH!

As I discussed in a previous column ("From a Discredited Platform to Vaporware," March 1, page 20), Microsoft Corp. agreed to pay Sun Microsystems Inc. some \$20 million for violating the contractual terms of its Java license. It also agreed to licensing terms so narrow that you could not avoid concluding Microsoft was walking away from Java. Microsoft's loss in the case was the token dollar payment to Sun as well as surrender of the moral high ground.

This is small potatoes for Sun, whose celebration had to be tempered by the realization that Microsoft's Internet strategy is beginning to pick up steam. Based around XML and Microsoft's Windows technologies, the .NET initiative is developing the buzz and press attention that signal market interest. Since virtually no aspect of the true .NET platform is shipping, the buzz is a testament to Microsoft's ability to create sparks out of thin air.

This momentum has Sun worried. Yes, Sun won the Java war not only in court but in the marketplace. Many—not to say most—new IT projects today are developed in Java. C and C++ are beginning to fill the role that assembly

language once did: They're used only when performance is a top priority. In addition, Java has won the application server war. Many—not to say most—application servers today are Java-based and are built as EJB containers. Java's appeal will likely spread as JMS becomes the messaging medium of choice.

Since Java is winning the language and application-server/middleware markets, why is Sun concerned with Microsoft's unshipped products? There are several reasons: Sun has not enunciated any Web strategy or an XML strategy, despite being the world's largest seller of Web server hardware. Worse, Sun's Web-oriented software isn't very good. Products from iPlanet—the Sun-Netscape Alliance—don't show up on a lot of radar screens. And Sun's own Web products (its mail server and other similar point products) are not exactly storming the market.

Without a software-product strategy or a software-systems strategy other than the continued proliferation of Java, Sun has had little with which to counter Microsoft's .NET. The Redmond initia-

tive is based on XML, SOAP, the new C# language and a host of related technologies, most of which do not yet exist. As Microsoft starts beating the drum, customers turn to Sun—apparently forgetting that it's a hardware company—and ask it to announce its response. Tired of having little to say, Sun called analysts and press to its campus in early February to announce Sun ONE, the company's Web initiative.

ONE is a new plan for integrating

Sun's Forte development environment, its iPlanet e-commerce and Web products, and J2EE. None of these products is new. And, in fact, the only new thing Sun announced was some "Webtop" development tools and other tools for development targeting handheld and wireless devices.

This is hardly heady or even new stuff. By announcing a strategy cobbled from products of no particular market importance (save J2EE), Sun for the first time in recent memory appeared to be on the defensive—scared that developers and businesses would choose Windows for their Web and e-business platforms rather than Sun and Java.

This negative self-view is, I believe, both right and wrong. It's certainly right for Sun to feel defensive about

iPlanet products. It's clear they will never compete with BEA's or IBM's products (predictably these two companies were conspicuously absent from the announcement). Let's face it, the iPlanet products were already dying when Netscape owned them under its own name, and now they're under the aegis of two companies, neither of which has real ownership of them. Sun should get out of this software business (for the same reason it doesn't sell a database to compete with Oracle) and actively support its Java application partners, especially BEA and IBM.

Java, EJB and J2EE are worlds ahead of .NET's unreleased and untested products. Sun has a commanding lead with its technology. Rather than compete with them with the iPlanet offerings, Sun should support the vendors and Java Community Process partners that are delivering tools and servers based on J2EE technology.

Sun should be unapologetic about delivering the best Web servers and the finest enterprise frameworks based on J2EE. Sun needs to continue its aggressive marketing of the technologies it knows best—and leave its partners to do the point product implementations. ■

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MIDDLEWARE WATCH



ANDREW BINSTOCK

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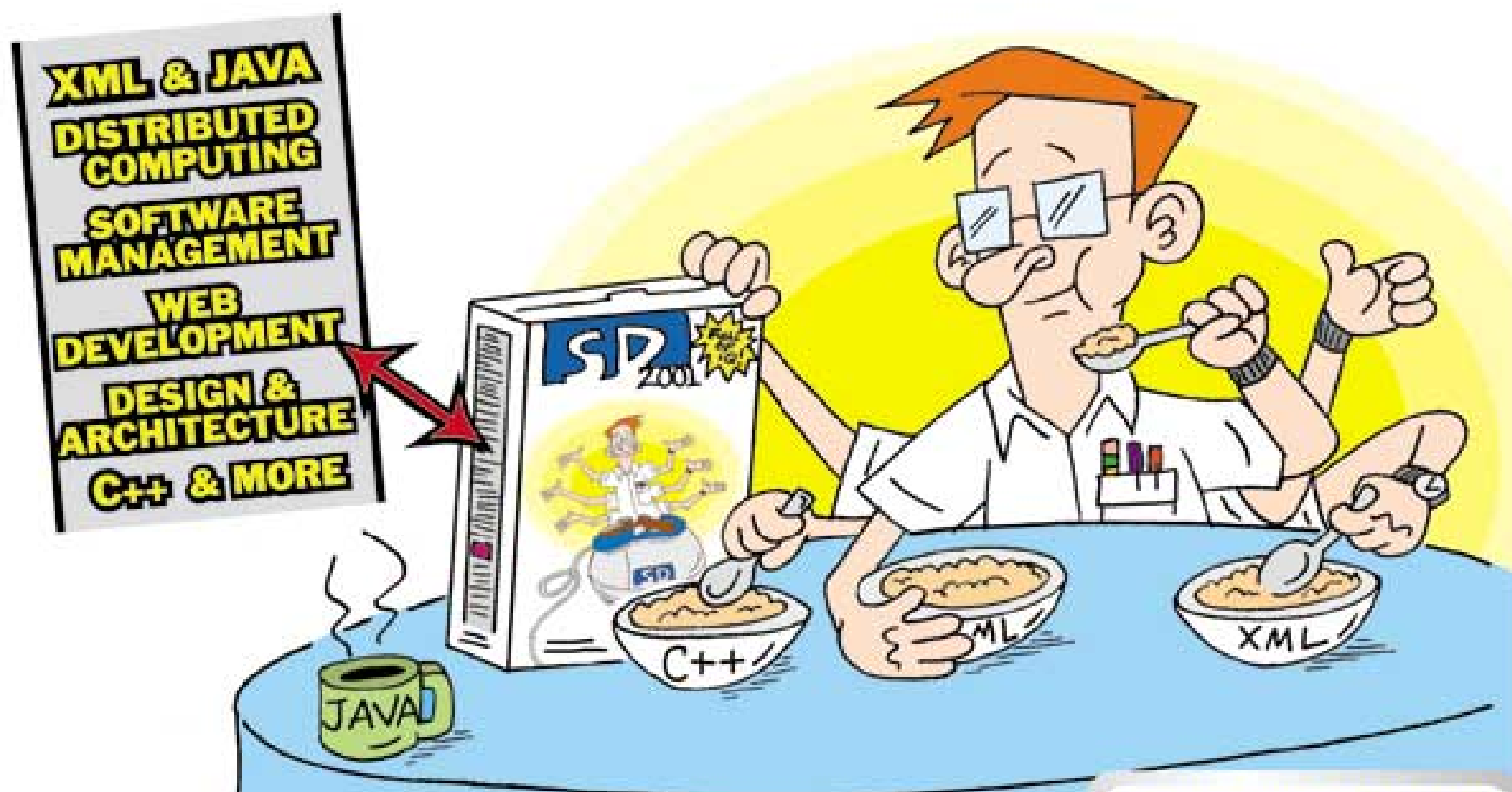


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HAPPY, HAPPY, JOY, JOY

Hey, world, look at me! That's right, over here! See me? I'm happy (and peppy and bursting with love). Thrilled, actually. Okay, downright euphoric. I'm Dick Van Dyke and Ed Wynn, floating on laughter up to the ceiling! I'm a 22EE (not a Sun specification) shoe away from joining the circus! And do you know what? I want to see a big, fat smile on the faces of each and every one of you, too. C'mon, I see it starting at the corners of your mouth. Don't fight it. There it is, let it out! Ha!

You got it? Good. Now, I want each of you to pass this happiness along to a friend, who then passes it along to another friend, and so on. Before too long, we'll have a whole army of people loving life, and feeling good about things. And then, with this small spark, perhaps we can create a groundswell of happiness, of irrational exuberance, if you will. Scream with me: "Life is good. Life is fun. Having money sure beats none!"

Now, let's go spend some. Thinking about upgrading the computer system in your office? Go for it! A new fleet of employee cars? No problem. After all, what good is money if you don't spend it? You can't take it with you. Look at Malcolm Forbes. Is he the richest guy in the afterlife? No, because he's over there, and his money's still here. How about a nice, new big office? Look, you survived the dot-com shakeout, right? You deserve it!

What's that, you say? Haven't I heard that a recession is looming over the economy? Internet companies are folding faster than Jimmy Carter in a game of liar's poker. People will be thrown out of their jobs and homes. Belongings will be repossessed. I'm

told some investment bankers are even preparing to do one-and-a-half gainers onto the sidewalks below their Wall Street offices.

Well, guess what? I don't believe it. Where's the beef? I'm from Missouri...show me! All I'm seeing is a lot of hype, a lot of noise. We can start by pointing at President Bush and Vice President Cheney, who before they even assumed office declared the economy was heading into a recession. We can blame Alan Greenspan, who made public in January his concerns regarding a recession, and then cut interest rates dramatically to prevent it from becoming so. What kind of mixed signal is that? We can look to ourselves,

because the bottom line is it is our mood that ultimately dictates how the economy will act. Just because the bubble of overvaluation finally has burst doesn't mean that most publicly traded companies aren't economically healthy and viable. It's all about how we perceive this information.

Irrational, you say? Tell me, what's rational about a stock market that punishes companies that make a profit—just not enough of a profit as predicted—and rewards companies that lose money, so long as the loss isn't as much of a loss as was expected?

What's rational about running up some IPO 200 percent on its first day of trading, and then wringing our hands and saying "the technology craze is dead" because that kind of growth could not be sustained? Or, for that matter, what's rational about a venture capitalist awarding millions to start-ups with flawed business plans and no idea how to actually generate income?

Look, I'll admit that we've taken

quite a fall from the high-flying times of yesterday—almost literally, yesterday. But the economic numbers still are way ahead of where we were in 1993, in the aftermath of Bush I, before the largest peacetime economic expansion in our nation's history. And, even with all of this naysaying, the fundamentals underlying our stock market still are strong. Plenty of companies remain tremendously profitable, even some in the technology sector.

Professional money managers certainly are not daunted by the numbers. Analysts who track options trading indicate professionals are bullish on the market. Much of their confidence, the analysts say, stems from a belief that Greenspan's monetary policies can keep the economy, and by extension the stock market, from a complete meltdown. The Fed, of course, already has cut interest rates by a half-percent twice this year, and could cut them again when it meets March 20. Yet the benefit has not yet been seen in the technology sector, because as much as Greenspan would like to believe he controls the economic destiny of the country, it really is in our hands. It's a matter of self-fulfilling prophecies: If we believe the country is headed toward recession, that's exactly where we'll go. But if we believe that by spending we can spark the economy, then that is what will happen.

(Of course, if I'm wrong, and you spend all this money and the economy tanks into a recession, you'll pretty much be left belly-up. In which case, I feel a disclaimer here would be in order: Not responsible for lost property. Whew, that's better!)

No, wait! Dammit, I won't buy into that bad karma! I'm no nattering nabob of negativism. Everybody, sing with me now: "Gray skies are gonna clear up, put on a happy face...." ■

David Rubinstein is executive editor of SD Times.

MONEY WATCH



DAVID RUBINSTEIN

BUSINESS BRIEFS

BEA Systems Inc. reported record fourth-quarter revenues of \$256 million, up 72 percent from \$149.2 million for the same period last year. Its license fees also experienced record growth of \$158.9 million, up 24 percent from \$128.2 million this time last year. Bill Coleman, BEA's CEO, attributed growth to providing product that offers a Web services-based look and feel . . . **Insignia Solutions Inc.** has secured an investment of \$4.7 million in private equity from **Wind River Systems Inc.** and a director of the company . . . **ThinkingBytes Technology**, which develops ThinkDB database software for handheld devices to access the Internet, has raised between \$1 million and \$2 million in bridge funding. **Metagenix Inc.**, which develops MetaRecon, an enterprise data management integrated development environment, also received \$800,000 in bridge financing . . . **IBM Corp.** chairman Lou Gerstner told a recent IBM audience that the get-rich-quick business schemes of dot-coms are ancient history, and that instead only serious focus on e-business strategies could guarantee revenues in the future. E-business isn't about content, he said, but about integrating technologies, maintaining reliable computing infrastructures and delivering e-sourcing . . . **Nokia Corp.**'s Niklas Savander, vice president of mobile internet applications, said in Cannes, France, that music, video and picture messaging would replace text messaging as the primary means of earnings revenues for mobile vendors, and give immediate revenue returns. ■

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www.apachecon.com

XML DevCon Spring 2001 April 8-11
New York Marriott Marquis, NY
CAMELOT COMMUNICATIONS CORP.
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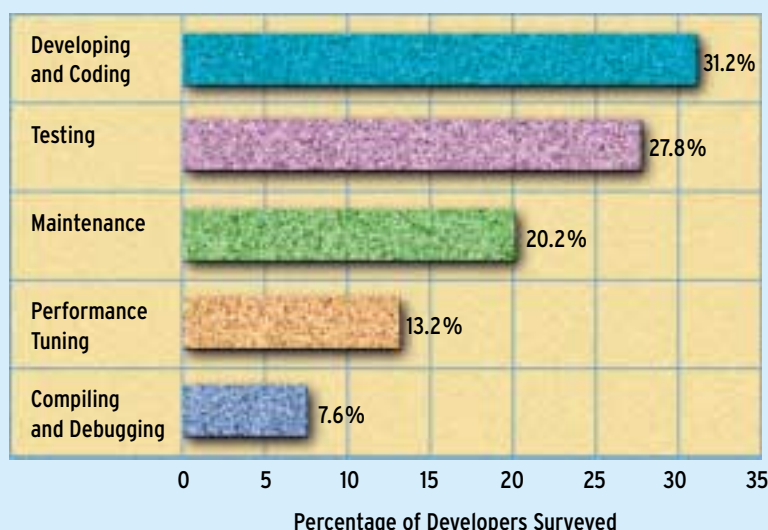
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What Types of Development Are Most Likely To Be Done on a Collaborative Site?



The idea of collaborative development is one that is taking root within the software industry. The most common development project most likely to be done on a collaborative site, according to the more than 600 developers surveyed, is application development and code writing, with more than 31 percent saying they are likely to do it. The least common function to be performed on a collaborative site is compiling and debugging, with less than 8 percent of respondents saying they are likely to do it.

Source: Evans Data Corp., North American Developer Survey, November 2000

EVANS DATA WATCH



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